JOURNAL
OF THE
WASHINGTON ACADEMY OF SCIENCES

VOLUME 36 JANUARY 15, 1946 No. 1

ETHNOLOGY.—*Mixed bloods of the Upper Monongahela Valley, West Virginia.*[1]

WILLIAM HARLEN GILBERT, Jr., Library of Congress.

We are accustomed to think of West Virginia as a racially homogeneous State populated by Old Americans of English, Scotch, and Scotch-Irish descent with an additional contingent in recent years of Poles and Italians in the mining areas. It may come as somewhat of a surprise to many to learn that there exists in the northern counties of the State a racial island of mixed bloods, known locally as "Guineas," numbering several thousand persons. The origin of this mixed race is unrecorded, and the relative proportion of white, Negro, and Indian blood entering into its makeup is difficult to ascertain. The main seat of this people is in northern Barbour County and southern Taylor County, but small groups are to be found in over half a dozen adjoining counties and in Garrett County, Md. From their homes in the hill country many have gone in recent years to the factory cities of West Virginia, Ohio, and Michigan in search of economic opportunity and social betterment.

It is difficult to find a completely acceptable term to designate these mixed people. Stigmatized by white public opinion as a sort of outcast group, they dislike and resent any designation used by outsiders for themselves. They especially resent the terms "Guinea" or "Guinea Nigger," which are most generally applied to them by their white neighbors.[2] There are several possibilities in explaining the origin of this sobriquet.

An educated member of this group is said to have worked out a genealogy for them several years ago in which he claimed that an English nobleman went to the Guinea coast of Africa in the early days (possibly as a remittance man), married a native Negro woman, and produced a large family of crossbreeds. Later some of these descendants came to America and became the ancestors of the "Guineas." Hu Maxwell, in his *History of Barbour County* (pp. 310–311), asserts that the mixed bloods of that county are called "Guineas" under the mistaken notion that they are Guinea Negroes. They are said, however, to have claimed for many years a descent from one of the Guineas (British, French, or Portuguese) in Africa or from one of the Guianas (British, French, or Dutch) in South America, and that their blood was native Negro or Indian.

[1] Received December 4, 1945.

Many suggestions concerning the Guineas were collected in correspondence with persons interested, notably Mrs. Eva Margaret Carnes, of Roanoke, Va.; Mrs. W. H. Conaway, librarian of Marion County, W. Va., at Fairmont; and Mrs. Howard Grant, of Philippi, W. Va. Mrs. Grant kindly made available extensive genealogical material on the Guineas collected by her late husband. In addition, considerable material was gleaned from the census schedules at the National Archives and at Suitland, Md. In November 1945 a short field trip was made to Philippi and Grafton, W. Va., and extensive interviews were had with W. M. Watkins, attorney of Grafton; Vergil Rohrbough, superintendent of schools in Taylor County; E. A. Hunt, superintendent of schools in Barbour County; Charles W. T. Lockard, editor of the *Grafton News;* V. C. Willhide, of Grafton; as well as a number of the Guineas themselves. Finally, full credit must be given to the steady cooperation and unfailing enthusiasm of Philip S. Proctor ("Chief" Turkey Tayac), of Washington, D. C., to whose initial suggestion this research is due.

[2] In the following discussion although the word "Guinea" is employed without quotes it is not meant to condone an approbrious epithet. Rather it is used for lack of any other single term to designate these people.

It is worthy of notice that during the nineteenth century the name "Guinea" was applied as an epithet to things or persons of foreign (especially Italian and Polish) and uncertain origin in many parts of northeastern United States (Mencken, 1936, p. 295, and *Dictionary of American English* **2**: 1193). The term was also applied to Italians of the laboring class because of an incident which took place in early American history when English pennies (jestingly called "Guineas") were circulated in North America and Italian help would receive them freely and even save them as valuable coins. From the coins the term was transferred to their recipients (Roback, p. 37). Undoubtedly there is some linkage of the West Virginia mixed bloods with Italians in the popular mind because the two races are frequently said to intermarry rather freely.

The term "Guinea" does not seem, however, to have any significance in relation to the appearance of the mixed bloods, even though "Guinea Negro" has generally meant a very black member of the African race, and it probably has no reference to the yellow-colored gold pieces made from Guinea gold. The mixed bloods are certainly not black, nor can their color be adequately described as yellow. Much more to the point is the locality idea, a vague tradition of a place called "Guinea" from which these mixed people spring. It is said that the name "Guinan" or "Guinea," locally pronounced "Guinny," has long been applied to an area northwest of Philippi in Barbour County where these mixed people are centered. This area, also known as "Chestnut Ridge," was regarded by the whites as lowering the value of property in the adjacent parts owing to the nature of its inhabitants.

In Gloucester County, Va., there is said to be a section called "Guinea Neck" inhabited by a peculiar people, isolated by the coastal land formation. It is possible that the ancestors of the Guineas may have migrated from some such a region westward to Berkeley or Hampshire County in Virginia, where we first hear of them from the census records.

It must be admitted, when all is said and done, that none of these theories of the origin of this term is quite satisfactory, and we are just as much in the dark as before so far as a real etymology of this name is concerned.

There are several other terms sometimes employed to designate the Guineas. One of these is "West Hill Indians" from the community of West Hill, which is their principal center in Taylor County at the present time. Formerly the term "Cecil Indians" was heard, derived from the community of Cecil, now flooded by the Tygart Reservoir. Since many of these people lived near the Grafton & Belington Railway (or G. & B. Railway) and traveled on this line extensively, they were sometimes referred to as the "G. and B. Indians." Sometimes the Guineas employed the circumlocution "Our People" to designate their own kind or again the name "Maleys," referring to the commonest surname (Male) among them.

The family names of the Guineas are limited in number and are the most important items for identification of members. The characteristic names are Adams, Collins, Croston, Dalton, Dorton, Kennedy, Male, Miner or Minard, Newman, Norris, and Prichard. Of these by far the most frequent in occurrence is Male. The name Croston is next in frequency. The Males, who also spell their name as Mayle, Mail, and Mahle, trace their descent back to an ancestor who was said to have come over from England during colonial times. One observer thinks that there may be some connection between the Males and the Malay Race. It is said, moreover, that in the Male clan the white and Indian blood is much more prominent than the Negro. The Crostons, who have also spelled their name Crosten, Chroasten, Croaston, and Crostin, claim to be of Dutch descent and trace their ancestry back to Hampshire County, Va., along with the Males.

There is nothing singular about the personal names of the Guineas, but it is worth noting that nicknames of a sort are frequently applied, such as "Pizen John," "Screech," and "Whistling George." As

in many other groups some given names recur again and again in certain family lines over several generations. The importance of names will be mentioned again in a later context in this paper.

Before proceeding further with a description of this peculiar minority it would be well to note the natural conditions of the geographic environment of these people and how these influences have shaped their manner of life. Barbour and Taylor Counties are located in the northern part of West Virginia along the axis of the Tygart River, a branch of the Monongahela. Barbour County is less rugged than the mountainous counties to the east and south, although there are a few cliffs of some boldness along the watercourses. To the eastward are Laurel and Chestnut Ridges, which sink into hills with rounded tops in Barbour. There are no wide valley areas in Barbour, however, and the level lands are to be found for the most part on the ridges or uplands. In the bottoms along the Tygart and its branches the "Great Laurel" (*Rhododendron maximum*) formerly grew most luxuriantly. This plant flourished especially where cool and shady glades prevailed and often covered large areas with impenetrable laurel thickets. In the early days these thickets were the retreat of wild animals and a great barrier to the hunter. Since the Tygart flowed northeastward through the center of the county and had numerous branches running out at an angle from its bottoms, it furnished an ideal hiding place for the various refugee families from whom the Guineas are believed to have sprung.

Taylor County is similar in geographic character to Barbour. Lying at some distance to the west of the Allegheny ridges, its surface is of an irregular type, with numerous rounded hills. In large areas the land is comparatively level, however, and easily cultivated. As in Barbour County the Tygart River flows through the center of Taylor County but in a northwesterly direction, dividing it into two almost equal parts.

Between Barbour and Taylor Counties the Tygart River executes a change of direction, from a northeasterly to a northwesterly course, and in doing so forms on its left bank a loop or horseshoe-shaped peninsula called "the Narrows." This loop of land, surrounded on three sides by the glades of Tygart River and on the fourth or western side by equally impenetrable thickets of laurel, served as an ideal place

FIG. 1.—The chief communities in the mixed-blood areas of Barbour and Taylor Counties, W. Va.

for the hiding of runaways and refugees of all kinds. So isolated was this peninsula that even as late as 1880–1900 it was accessible only on horseback.

Not far to the south of the Narrows in Barbour County ran the old Indian Trail called "Horseshoe Run Trail," which started from the region of the Northern Branch of the Potomac in Maryland and ran across the Cheat River, up its Clover River Branch, crossed the Tygart slightly to the north of Philippi, and then con-

tinued westward into Harrison County (Hu Maxwell, 1899, map). Along this trail bands of Shawnee, Cherokee, Delaware, Hurons, and other tribes made their way in going across the central Alleghenies in the Colonial period. The natural game refuge in the Narrows not far off to the north along the Tygart could not have failed to attract the attention of hunters who were traveling this trail.

A considerable period of isolation must be assumed to account for the long-continued inbreeding which has characterized the Guineas for a number of generations. Before the 1840's Harrison County comprised all the area west of the Tygart, and Randolph County all the area to the east. In both of these counties Guinea family names began to appear about 1815 and to increase with the formation of Barbour County in 1843 and Taylor County in 1844.

Originally hunters and farmers on the ridges, the economic life of the Guineas expanded with that of the region in which they grew. They began to cultivate wheat, buckwheat, corn, hay, and orchard crops such as apples. Dairying, as well as poultry and cattle raising, became frequent. Garden vegetables were raised also. The predatory industries such as lumbering (in the oak, poplar, maple stands) and coal-mining engaged their labors. The building of the Baltimore & Ohio Railroad and other rail lines employed these people, along with Irish and other immigrant contingents. Some hauled coal while others became domestic servants in homes of nearby whites. Some became hucksters on market day, selling blackberries or other produce in nearby towns. In the coal mines the Guineas often worked in gangs made up of their kind. There was undoubtedly considerable contact with the Irish at one time. In the mines of Marion County they encountered at a later date the Poles and Italians of the New Immigration.

As many left the ancestral hive and settled in cities they took up occupations of various sorts and took on new names. In Ohio they settled near Canton, Zanesville, Athens, Chillicothe, Sandusky, and Akron, while some went even as far as Detroit. In these localities their work varied from gypsum works at Sandusky to gardening in the suburbs of Chillicothe. Migration back and forth into Ohio seems to have been going on from 1880 or earlier.

In Grafton, county seat of Taylor County, the Guineas were almost unknown as a group until recent years. Only once a year, on Memorial Day, did any large number come into town and that was on the occasion of a ball game. Since the building of the Tygart Dam in 1937 and the formation of the Reservoir, which flooded out large areas of their original domain, they have moved increasingly into the suburbs of Grafton, especially Blueville. Grafton restaurants and barber shops have now occasionally put up signs bearing the inscription "white patronage only," and color classification of the mixed bloods has bothered the hospitals and schools.

In Philippi, the county seat of Barbour County, the Guineas have been known from the very foundation of the settlement and were said to have been among the first settlers of the vicinity (1780). The chief settlements in this county are at Chestnut Ridge Community northwest of Philippi, at Meriden nearby on the Tygart, around Moatsville, Lick Run, Buchanan, Galloway, and Clemtown. Clemtown is in the central area of the Narrows. Almost all the Guineas are located in compact masses as small landholders on the ridges in the central and northern parts of the county.

In Taylor County the chief centers are West Hill to the south of Webster, Knottsville, and the vicinity of Flemington. The flooded area around Cecil, now occupied by the Tygart Reservoir, was also a former center. Most of the Guineas are in the southern part of Taylor County, but with the flooding of large areas in 1937 many scattered to other parts, thus giving rise to school troubles. In Marion County coal towns these mixed bloods are said to live in the less-favored parts of town along with the foreign born and the Negroes. The Guineas, however, have not gone to the city and industrial areas to the same extent probably as the West Virginia Negroes.

A number of other counties in northern West Virginia have small groups of Guineas. These are Monongalia (to the north around Morgantown), Grant, Mineral, Preston, and Tucker to the east, Wirt to the west, and Braxton and Randolph on the south. At Big Island Run in Wirt County there has long been a group of the Male family, rather dark in color, who were widely respected by their white neighbors for their industry and honesty. This colony has decreased much by migration in recent years. In Garrett County, western Maryland, the Guineas long had a small colony whose significance will be mentioned later.

As in all cases of unusual little groups of isolated peoples we are constantly met with the query, "What do they look like?" This is a question much easier to pose than to answer. From the accompanying photographs of Guinea school children it may be seen that although there is a considerable range in variation none seem to exhibit the marked features of the Negro nor for that matter of the Indian. Most appear to be of the classification of "Near Whites" or what in the West Indies is called the "Mustee" type. In fact, the Guineas do pass for whites outside of the communities where they have long been known.

Hu Maxwell, in the work previously referred to, speaks of them as "partly-colored people" and says that they vary in color from white to black, often possessing blue eyes and straight hair. According to another observer a single family of brothers and sisters may range from the blackest Negro to a blonde, blue-eyed, fair-skinned person, with all the shades in between. Some are perfect Negroes, while others have a marked Indian look. Most of the neighboring whites seem to regard the Guineas as mulattoes, while a few, noting the angular facial features and the hawk-like eye and nose, will concede an Indian element. Several informants commented that the Guinea women seemed to be either very ugly or very good looking with few in-betweens.

There can be little doubt that the Guineas, in common with the Wesorts of southern Maryland and the Croatans of North Carolina, are another example of the triple racial admixture of Indian, Negro, and white to be found in a number of places in this country where circumstances have favored their development. Only a detailed anthropometric analysis at some future date will yield the evidence for physical typology and the relative proportions of each group. Several of the Guinea genealogies refer back to full-blood and half-blood Indian ancestry, but the entry of Negro blood into the group is not recorded.

According to local white opinion the habit of inbreeding has weakened the Guineas. Several informants mentioned the deformities of the joints, especially of the arm and leg joints, as occurring at birth among them in a number of instances. Among other defects mentioned as occurring are bad hearing, poor sight, harelips, humpbacked conditions, and mental deficiencies and aberrations. In the line of diseases tuberculosis and typhoid fever are given a prominent place.

The size of the family is said to be above average. One observer mentioned three families in his neighborhood who had fourteen or fifteen children each. A family size of six or seven children is thought to be common within recent years.

The numbers of the Guineas are not subject to easy estimate. Hu Maxwell asserted that at the time he wrote (1899) they totaled 1,000 in Barbour County alone. If this figure be accepted as a conservative estimate, it must be admitted that since that time their numbers must have increased considerably in the county. It is thought by local informants that between 500 and 800 adult voters were of this race in Barbour County during 1944 and that this ought to represent a total population of 3,000 to 4,000. An additional 500 voters in Taylor County of this race would add perhaps 3,000 more, bringing the total for the two counties to a possible 7,000. To this aggregate must be added an unknown number scattered in other counties of West Virginia, Ohio, and Michigan. It is probably safe to say that the total number of the Guineas is somewhere between 7,000 and 8,000.

FIG. 2.—Members of Male, Croston, and other families in Barbour County, W. Va.

Some light may be thrown on the numbers question from Table 1, giving the population by race in Barbour and Taylor Counties from 1850 to 1940 (*Negroes in the United States 1920–1932; Negro Population in the United States, 1790–1915*). In a rural county such as Barbour it seems unusual to perceive such a marked increase in Negro population from 1920 to 1940. This taken in conjunction with the relative proportions of free Negroes and slaves and of blacks and mulattoes in 1910 would indicate something of the growth in numbers of the Guineas. In Taylor County conditions are reversed and the Negro population seems to outrank the Guineas in numbers.

TABLE 1.—POPULATION BY RACE OF BARBOUR AND TAYLOR COUNTIES, W. VA., 1850–1940

Year	Barbour County				Taylor County			
	Whites	Free Negro	Slaves	Total	Whites	Free Negro	Slaves	Total
1850	8,670	222	113	9,005	5,130	69	168	5,367
1860	8,728	135	95	8,958	7,300	51	112	8,958
1870	10,312	386	...	10,698	9,024	343	...	9,367
1880	11,413	457	...	11,870	11,056	399	...	11,455
1890	12,204	498	...	12,702	11,785	362	...	12,147
1900	13,390	808	...	14,198	14,553	423	...	14,976
1910	14,937	920*	...	15,857	16,025	527	...	16,532
1920	17,208	820	...	18,028	18,099	641	...	18,740
1930	17,657	971	...	18,628	18,391	722	...	19,113
1940	18,651	1,218	...	19,869	19,341	578	...	19,919

* 71 black and 849 mulatto.

According to the 1930 census only 33 percent of the "Negro" (i.e., nonwhite or mixed) population of Barbour County between the ages of 7 and 13 years were attending school. This contrasts with the West Virginia average figures for these age groups in the "Negro" population of 93.5 percent for that year and a county range within the State (outside of Barbour County) of 89 to 100 percent "colored" attending school. The same 1930 census gives a figure of 32.3 percent illiteracy for the "Negro" population of Barbour County, which is the highest in the State of West Virginia for that year. The preliminary figures for the 1940 census showed 97.7 percent of the "Negro" population of Barbour County between the ages of 7 and 13 attending school.

The school question regarding the Guineas has been an acute one for a number of years in both Taylor and Barbour Counties. According to West Virginia law white schools are to be separate from colored. For at least 30 years the Guinea children have been attending schools separate from the white. At the present time there are two such schools in Taylor County, a two-room building at West Hill and a one-room structure at Mount Airy, southwest of Knottsville. In Barbour County there are five or six such schools, at Prichard, Lick Run, Buchanan (Sutton School), Meriden (Hanging Rock School), and two at Chestnut Ridge.

School troubles have developed in both counties from time to time over the segregation issue and the classification of these schools as "colored." Apparently, no Negroes attend these Guinea Schools and there are several Negro schools in the two counties also. The following citation from the *Grafton News* of September 15, 1944, will explain something of the situation faced in Taylor County:

> Another problem . . . is the matter that concerns the failure to open the Mt. Airy one room colored school. Although the school was scheduled to open, its teacher, Earl G. Mayle, failed to open it Wednesday, September 6, when the other schools of the county began the current term.
>
> From the information available it appears that the residents of that community objected to sending their children to a school that was designated as a colored school. Apparently fearing that some difficulty might develop over the matter Mayle failed to open the school and this week tendered his resignation to the Taylor County Board of Education. Mayle had been the teacher at Mt. Airy for a number of years.
>
> The enrollment at Mt. Airy school, which is located in Knottsville district, last year was 18 pupils. Unofficial observers have it that only seven or eight children reported for school on the opening day, with the other children presumably being kept home by their parents.
>
> According to stories reaching Grafton there appears to be an organized movement, on the part of the parents, objecting to their children attending a school designated as a colored school.
>
> No indication has been made as to what steps the board of education will take toward opening the school or attempting to settle the pertinent question as to whether the children of the many families of mixed or unknown races which reside in that section must attend a colored or white school.

Much of the recent school problem in Taylor County has been due, it is claimed, to the building of the Tygart Dam in 1937 and flooding of area formerly inhabited by many Guinea families with consequent scattering to other parts of the county. Here the children were faced with trouble when they tried to enter the white schools.

In Barbour County there has been considerable trouble where white school administrators have occasionally failed to deal with the problem intelligently. It is said that over 20 members of the Guinea group were in jail at one time over failure to send their children to school. The teachers in the Guinea schools have been mulattoes and Guineas. Within the past year two schools have been burned down by persons unknown. One of these was a new school with much of the latest equipment. A number of court suits have been initiated to determine whether the Guineas were white or colored. Factionalism among the Guineas themselves is blamed for some of the school troubles in this county. One faction is said to desire the monopoly in the use of one school over another.

The religious affiliation of the Guineas appears to be almost entirely Protestant. Many are members of the Free Methodist denomination, while others belong to the United Brethren and the Pentecostal Faith. In Barbour County the major groups among the whites are the Methodists and United Brethren, with the Baptists ranking far behind in numbers. The Negroes of the county, however, appear to be mainly Baptist. In Taylor County, on the other hand, the Baptists are in a majority among the whites with the Methodists somewhat less numerous. There are some half a dozen exclusively Guinea churches in the two counties of which the ones at Chestnut Ridge and West Hill are examples. The Guineas have their own cemetery at Mountain View. Other cemeteries mentioned in connection with their burials are Shiloh, Chestnut Ridge, Silent Grove, Prichard, and Welch.

Politically the Guineas have shown a strong trend toward the Republican Party in an area where the general voting list shows a tendency for Democratic voters to outnumber the Republican. It is claimed that in Barbour County the Guineas hold the balance of power between the two parties. White politicians, it is said, exert every effort to swing the Guinea vote in their favor. One such propounded a theory with which he hoped to win votes from this group several years ago. He asserted that just after the Revolutionary War a scientist bent on breeding a race of supermen brought the ancestors of the Guineas into the Narrows on the Tygart River to raise them in isolation from the rest of the world. We are not told whether this attempt at flattery gained the votes he desired. Another political figure asserted on the witness stand that he would be proud to have his daughter marry a member of the Guinea race. Neither of these statements accorded with local white public opinion.

The contempt of some of the neighboring white people for the Guineas is marked. They are regarded as the dregs of society, as outcasts of little consequence or importance. Others among the whites feel much more sympathetic toward the Guineas and speak of them as capable people when they are given opportunities for advancement. The chief complaints which one hears made are chicken-thieving, bootlegging of illicit liquor, and similar derelictions. Occasionally there are serious altercations within the group, ending in homicide or other serious assaults. As before noted, cases of arson have also been charged to the Guineas.

The mixed bloods, along with other country folk, congregate in the town on Saturday afternoon and evening to gossip and meet their friends. In Philippi the courthouse is a favorite rendezvous for Guineas, and some may be found there at almost any time. In Grafton they congregate in front of the A. and P. Store. Fiddle-playing and singing were favorite recreations with the older generation. They are said to be particularly addicted to the old, well-known Negro spirituals. There is an annual fair held in September by the Guineas near Philippi, and this is entirely organized and conducted by them.

In the military draft for World War II the Guineas of Taylor County have gone for the most part into the army as whites. Apparently there was some sort of prior agreement among them to register as white rather than as colored. In Barbour County, on the other hand, draftees are said to have gone under both categories. The type of racial classification for the draft can be ascertained by watching the lists published in the newspapers whereby the two races (white and colored) are reported separately.

When Guinea youths migrate or go into the army they often return to the ancestral hearth bringing white girls as brides, and the latter are faced with the social problem of meeting their varicolored in-laws. This situation has been said to result occasionally in divorce or annulment due to the difficulties of adjustment. One such case was mentioned in which a dramatic racial denouement occurred when a wealthy bride drove up to the poor dwelling of her husband's people in her "fancy" car and was shocked beyond words to discover that they were locally considered as colored.

In recent years there has been apparently an increasing resistance on the part of the Guineas to their classification as "colored." One doctor in a town hospital had trouble with a Guinea mother who threatened a lawsuit because he had listed the child born to her as "colored."

Permanent migration out of Barbour and Taylor Counties has been recommended by local white officials as the best solution for the individual Guinea. By moving to a community in which there is no knowledge of the Guineas as a group it is quite possible for the individual to pass into the white classification in many instances.

Two incidents of this type might be cited. In a nearby county seat there was a Guinea man of unusual physique, tall and sturdy, who worked with a paper and pulp company. As time went on, by reason of his skill and industry, he was promoted to the position of foreman and finally to plant superintendent. Possessed of a good income and reputation, he stood high in the estimation of his neighbors in spite of the known fact that he was of mixed-blood descent. His attractive daughter was sent to a girls' finishing school in Virginia and passed without question as white. A man instructor was attracted to her and the two were married. Soon afterward the new bridegroom met his father-in-law and the latter took him aside and told him the whole story of the Guinea racial background with the suggestion that the marriage might be annulled if he so desired. The bridegroom did not flinch, however, and accepted the situation, taking a position with the paper mill, and never returned to his former teaching post. He and his wife never had any offspring, however, so the story goes.

In another instance a Guinea youth played on a high-school football team in a town nearby and made a splendid record. Subsequently he went to a Virginia college for four years, graduated, and married into a white family of good status with apparently no trouble ever arising over his race.

In the local courts of Barbour and Taylor Counties a series of lawsuits over school attendance took extensive testimony from neighbors, local reputation, birth records, marriage records, voting records, and school and church attendance records, regarding the race of the Guineas. In the census records persons with Guinea family names in Barbour and Taylor Counties are classified as "mulatto" in the period from 1810 to 1880.

If there is such a thing as group character one of the traits assignable to the Guineas is an interest in skill and cleverness. It takes the form of a real dexterity and an emphasis on the clever and the genuine use of skill. At West Hill the Guineas are said to have a special "telegraphic" system of their own for transmitting news almost instantaneously, for everybody there seems to be immediately aware of any stranger approaching the top of the hill. Quite a number, moreover, have gone to college and later served as teachers or professional men among their own kind or elsewhere. There is apparently a very marked emphasis on education and higher learning.

An instance of cleverness may be cited from a case occurring about 40 years ago.

A certain mixed-blood man, A. N., owned an old gristmill in the Cove District of Barbour County. For several years his son R. A. was with a circus but later came back to work in the mill and put the tricks he had learned into practice to mystify his neighbors. It soon came to be noised about that the old mill was haunted. Boxes and barrels would move mysteriously across the floor and other strange things happened. The local populace for miles around came to see the curious antics of the ghost. A certain "Capt." J. R. undertook to "lay" the ghost. He went to the mill one evening and after considerable wrangling R. A. consented to be tied up; this, "Capt." said, would show whether R. A. was the ghost. Barrels began to roll over the floor and down the stairs, while R. A. struggled with his bonds and shouted loudly about losing his grain. A rock or small piece of quartz dropped mysteriously upon a scale, and "Capt." wrapped it up in his handkerchief and took it home for examination in the daylight. Upon arriving home he locked the handkerchief and quartz in the drawer. When morning came he unlocked the drawer, took out the handkerchief and untied it, but the quartz had disappeared. That put an end to "Capt.'s" attempt to lay the ghost.

According to one informant the Guineas can be divided into three sets, locally illustrative of variation in character. These are (1) the West Hill group of Taylor County, (2) the Chestnut Ridge group of Barbour County, and (3) the Clemtown group on the borders of Barbour and Taylor Counties.

The first group were characterized by fairly good behavior, industriousness, and the fact that they got along very well with their neighbors. They were still regarded as in a separate status from the whites, however, and a few years ago when one of these persons, a prosperous farmer, attempted to buy a farm in another part of Taylor County where Guineas were not previously settled the white neighbors got together and effectively barred the sale.

The second group lived in an isolated section somewhat apart from all neighbors and were extremely backward because of the poor quality of their land. They were said also to be more "mixed up" racially than the other two groups. Their position was definitely not good.

The third group had good farmland and for a long time were very progressive and frequently prosperous rural folk. They kept up their taxes and were careful of their racial affiliations, mixing only with the equally respected West Hill "crowd." But during Prohibition they went in rather heavily for bootlegging, and this has sadly deteriorated their previous good reputation in the region.

The Guineas as a whole are strongly characterized by the spirit of cooperation in spite of the factions and internal disputes. Whenever the advantage of the group as a whole is at stake they are quick to notice it and to bring to bear a common effort. This is shown in the attitude regarding school classification as "colored" and in the agreement to register uniformly in one county as white for the draft. As previously noticed, the phrase "our people," is employed for themselves and betrays a certain degree of consciousness of kind. A certain aggressiveness is also exemplified in the interest in court or legal procedures, especially those involving their own status.

The history of a racial minority of this type must be gleaned from local records of births, deaths, and marriages and from the census records of persons with the Guinea family names in the "free colored" or the "mulatto" categories. One thing that can be established from the outset is that for a long time the Guineas have been intermarrying among themselves and that matings with outsiders have been definitely in a minority. For instance, an examination of 31 marriages of Collinses from 1856 to 1915 discloses that only three were with persons of non-Guinea family name (Douglas, Stalnaker, and Davis), about 10 percent. Similarly, in a list of 81 Croston marriages from 1858 to 1931 only 8 were with persons of non-Guinea family names (Kisner, Hunter, Hendrick, Parsons, DeCost, Ross, Wilson, and Moore), again about 10 percent.

In explaining the origin of the Guineas

some attention must be given to the existence of still smaller knots of people settled here and there in the region farther east. For instance, there is the small colony of half a dozen families of mixed Indian descent at present located on the Blue Ridge Mountains near Boonesboro (Washington County), Md. These may be descended from two family groups named Perl and Patterson, which were located in the vicinity of Jefferson, Lander, and Catoctin Mills in 1889. In that year James Mooney, the Smithsonian anthropologist, sent out questionnaire forms to a number of communities in Maryland, Delaware, and North Carolina on various topics having to do with Indians and Indian remains still in the vicinity. The results are still in the archives of the Bureau of American Ethnology at Washington. Among them is the notice of the above-mentioned small group.

He gives similar notice about the existence of three or four families going by the name of Mail or Male, living in the extreme western part of Maryland near Oakland and Deer Park who had traditionally migrated from Hampshire County, Va., a few generations before. It is likely that from these much smaller pockets of Indian remnants the recruits were drawn together sometime during the nineteenth century to form the nucleus of the larger present-day settlement of Guineas in Barbour and Taylor Counties, W. Va. (Gilbert, 1946).

In Table 2 is shown the development of Guinea family names in selected counties of Virginia, later West Virginia, and the increase of their number with each decade is evidently an index of some process of multiplication within an isolated area and with consistent inbreeding. The history of the race, then, is written largely in the increase in the family names in limited areas of the State (Woodson, 1925, pp. 175, 187, 188).

The name "Male" occurs in a few scattered instances in Chesterfield, Norfolk, and Hampshire Counties of Virginia, in York and Bedford Counties of Pennsylvania, and in New York City in the census lists of 1784 and 1790 for these areas. None of these are in connection with persons designated as nonwhite.

TABLE 2.—OCCURRENCE OF GUINEA FAMILY NAMES IN COUNTIES OF VIRGINIA (LATER WEST VIRGINIA) 1810–1880
(Numbers of families, free colored or mulatto, with these names in each decennial census)

Name	Harrison County (1810–1840)	Randolph County (1810–1840)	Barbour County (1850–1880)	Taylor County (1850–1880)
Adams			–, –, 1, 1	–, 2, 1, 2
Collins	–, –, –, 1	–, 1, 1, –	1, 3, 6, 4	–, –, 1, –
Croston		–, –, –, 1	2, 6, 10, 8	–, –, 1, 1
Dalton			5, 1, 4, 4	–, –, 1, –
Dorton		–, –, –, 1	–, –, 2, 1	–, –, –, 1
Kennedy (Canada)	1, 2, 2, 1	–, –, –, 2	2, –, –, 4	
Male	–, 1, 1, 5	–, 4, 4, 10	11, 11, 23, 35	2, 4, 6, 5
Minard (Miner)			–, –, –, 2	–, –, –, 1
Newman	–, 3, 3, 2	–, –, 2, 2	6, 3, 5, 5	2, –, –, –
Norris		–, 3, 3, 5	5, 1, 2, 4	–, –, 1, –
Prichard			–, 1, –, 2	1, –, 1, –

In the Virginia census of 1782–1784 there were a number of Collinses, Norrises, Pritchards, and Newmans, whose racial character, outside of the fact that they were not slaves, is unmentioned. The county records seem to indicate that the Newmans stem from Loudon County, Va., while the Crostons and the Males both appear originally in Hampshire County of that state. According to one account the Pritchards are of slave origin from Hampshire County, Va. The Minards have a tradition of their Pennsylvania origin. While the Newmans claim an Irish background, and the Males an English, the Minards and Crostons assert a Dutch origin for their family names. Both Norrises and Males have ancestors of Indian or half-Indian race in their family genealogies. One or two cases of Portuguese intermarriage with Males are recorded. It is interesting to note that one theory of Guinea origins traces them back to Spaniards, perhaps some lost followers of De Soto. The name Adams is a rare one among the Guineas but is shared by them with mixed Indian groups in Virginia and with the Wesorts in Maryland, another mixed group. The name Collins, it is also worth while to note, is one of the commonest surnames among the Melungeons of Ten-

nessee, a mixed group similar to the Guineas. In addition to Adams, the surname Newman is shared by the Guineas with the Wesorts of Maryland. The name Norris or Morris is shared with the Nanticoke mixed bloods of Delaware.

The derivation, then, of the Guineas is an extremely complex picture. We can reconstruct their history tentatively on the basis of partly runaway slaves, partly freedmen, partly mulattoes, some stray Indian families, and perhaps partly recruits from neighboring mixed peoples of the same kind such as the Virginia tidewater groups, the Wesorts and the Melungeons. How this group first came together, why certain family lines only were selected for the inmarrying group, and where the dividing line exists between true mulatto and Guinea, are unclear parts of the picture. The tendency to marry only within certain family lines reminds one of the preferential mating rules of some of the primitive Indian societies of North America.

Another puzzling problem is the origin of the stigmatization attaching to the Guineas. There are many families of West Virginia, as in other parts of the United States, who are proud to claim Indian blood in their veins and who are not stigmatized for it. In the case of the Guineas the inference is that they are *all* in some degree part Negro in blood, but this again is difficult to prove and also difficult to believe. There may be a lingering idea that these mixed bloods are mainly of runaway slave origin.

In considering the future prospects of the Guineas it can not be too strongly emphasized that the more thoroughly they are studied and their origin understood the better will be their chances of ultimate absorption and acceptance as members of the larger ethnic group of undifferentiated citizens in the United States. Already they have achieved progress in this direction as compared with some of their similar mixed relatives in neighboring States. It might be worth while to itemize a few of their characteristics in comparison with the Wesorts, a similar racially mixed group some 200 miles eastward near the mouth of the Potomac (Gilbert, 1945).

The environmental circumstances of the two groups are somewhat contrasting, the Wesorts being located on the Coastal Plain and in the neighborhood of tidal or near-tidal swamps, while the Guineas are located in the Allegheny Plateau area on the ridges and narrow river valleys protected by laurel thickets. The economic development of the Wesorts has been mainly along agricultural lines, while that of the Guineas has been in both agriculture and the extractive industry of mining. The Wesorts have been forced by a variety of factors into Negro institutions or into institutions whose membership is largely Negro (schools and churches), while the Guineas have segregated out in their own schools and churches. One of the important factors in Wesort development has been the large amount of trade relationships these people have had with Negroes, especially in urban or suburban environment. The Wesorts have many, if not most of their business dealings with Negroes, such as selling farm produce and buying up material for salvage. The Guineas do not seem to have gone much into trade, and where they have the business dealings have been more with whites. The Guinea churches, being organized on an independent congregational basis, have been easier to segregate by themselves than in the case of the Wesorts, who are Roman Catholics and attend parish churches in which either Negroes or whites preponderate.

The location of the Wesorts is in an area where Negroes make up practically half of the population, while that of the Guineas is in an area where Negroes are scarcely as numerous as the Guineas themselves. The result is a situation of "southern" social surroundings for the former and "northern" social surroundings for the latter. The overflow of Wesort population has been into cities such as Washington and Baltimore with strongly fixed racial traditions of segregation, while that of the Guineas has been to cities of Ohio and Michigan where conditions are fluid and possibilities of "passing" are more frequent.

In the rural environment there has been

much more of the dependency relationship in the case of the Wesorts than in the case of the Guineas. The former have been mainly tenant farmers, scattered about over a wide area, while the latter have been primarily small landholders concentrated in large masses within small neighborhoods. The economic life of the Guineas is considerably more variegated than that of the Wesorts and their possibilities of making a living at present seem much better. On the other hand, there is no tradition of craftsmanship or fine artisan work among the Guineas as there has been in past times among the Wesorts.

The sum and substance of this comparison seems to indicate an increasing identification, in the case of the Wesorts, with the Negro minority while on the contrary the ties of the Guineas have become increasingly stronger with the whites. In a biracial society such as the United States has long possessed the in-betweens tend in the long run to go over as a body into either the one or the other of the two larger groups. In the present comparison the Guineas seem in a better way to solve their minority racial status problem than do the Wesorts through absorption in the larger racial group.

In the case of the Guineas independent organization for group ends would seem to be largely superfluous, if not positively harmful, in the sense of emphasizing minority status. In the case of Wesorts it would seem that group organization would be of the greatest value in preserving an identity of group status which is fast being lost under present tendencies.

It is to be hoped that the present school controversies involving the Guineas will soon be solved. Recognition that Guinea schools are not "Negro" would be of the greatest assistance in this direction. A policy of encouraging greater dispersal for these mixed bloods would also be helpful. A modification of segregation to the extent of granting greater leeway for social participation in white churches and schools by Guineas is to be anticipated. In the long run complete absorption of these mixed bloods into the white community is very likely to take place.

LITERATURE CITED

ANONYMOUS. *Board will air Mt. Airy School problem Thursday.* Grafton (W. Va.) News, Sept. 15, 1944, p. 1, col. 2.

CRAIGIE, Sir WILLIAM A., and HULBERT, J. R. (editors). *A dictionary of American English* 2: 1193. Chicago, 1940.

GILBERT, WILLIAM H., Jr. *The Guineas of West Virginia* (brief communication). Amer. Anthrop. 48. 1946.

———. *The Wesorts of southern Maryland. An outcasted group.* Journ. Washington Acad. Sci. 35 (8): 237–246. 1945.

MAXWELL, HU. *The history of Barbour County, West Virginia*: 310–311. Morgantown, W. Va., 1899.

MENCKEN, H. L. *The American language:* 295. New York, 1936.

ROBACK, A. A. *A dictionary of international slurs:* 37. Cambridge, Mass., 1944.

U. S. CENSUS BUREAU. *Negroes in the United States, 1920–1932.* Washington, 1935.

———. *Negro population in the United States, 1790–1915.* Washington, 1918.

WOODSON, CARTER G. *Free Negro heads of families in the United States in 1830:* 175, 187, 188. Washington (Association for the Study of Negro Life and History), 1925.

CHEMISTRY.—*Salt ribbons and ice ribbons.*[1] ROLAND W. BROWN, U. S. Geological Survey.

Recently I soaked a sample of clayey peat in water overnight in a glazed earthen bowl borrowed from W. H. Hass, one of my colleagues. The glaze on the bowl was extensively cross-fissured, the fractures being barely visible to the naked eye. In the morning I found the outer surface of the bowl covered with isolated small ribbons as well as polygonal patterns of a white salt growing at right angles to the surface out of the minute cracks in the glaze (Figs. 1–4). The ribbons were thin, curly, striated, and fragile, from 1 to 5 mm. long, and were only lightly attached to the bowl. When I showed this effect to Dr. Hass and his assistant, Patricia Proctor, they were not surprised, for they had frequently found larger and more varied salt ribbons on the bowls in which they liberate conodonts by digesting limestones and shales in acetic acid. Qualitative tests by W. G. Schlecht, another of my colleagues, showed that the salt was principally calcium acetate. As the peat contained no lime I concluded that the salt ribbons developed from a reservoir of the salt, residual in the pores of the bowl from previous use.

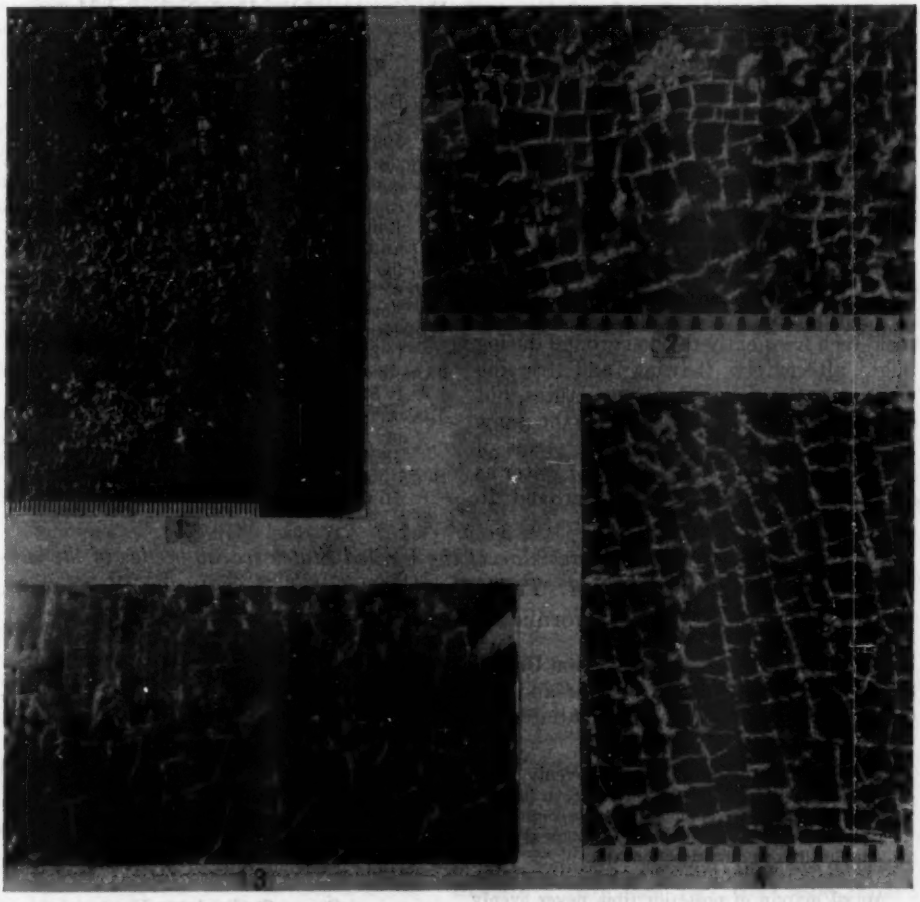
The ribbons were probably formed as follows: Calcium acetate was already present in the pores of the bowl, having seeped in from solutions previously in the bowl. Fresh water in the bowl permeated the pores, dissolving the calcium acetate and pushing the solution forward toward the surface. The warm temperature and moderate humidity in the room promoted evaporation from the surface of the bowl, thus stimulating the capillary flow of salt solution through the bowl. The salt was deposited just within the pores and interstices of the glazing, and the flowers or ribbons were pushed bodily outward as more solution seeped forward and the water evaporated. If deposition did not take place just beneath the surface the ribbons could not remain attached to the bowl. The curvature of the ribbons is caused by more rapid growth on one side than on the other. By touching the tips of several ribbons with drops of red ink I was able to see plainly that the ribbons grew from the base and not from the free end. They were, therefore, solid structures, without internal canals.

The deposition of salt at small apertures produces several kinds of structures simulating the natural helictites (not stalactites or stalagmites) that sometimes develop on cave walls and ceilings. R. E. Janssen (1944), for example, observed two kinds of salt growths, which he called "pickle helictites," that formed at small holes in the lids of pickle jars—a solid but delicate kind, and a hollow, sturdier kind. As the helictites had already completed their growth before he discovered them, Janssen had no opportunity to determine whether the solid forms grew from their bases or at the tips by capillarity of materials through their interiors. The hollow forms evidently developed somewhat in the manner of geyser cones. The growth of helictites has, however, been studied in a series of ingenious laboratory experiments by L. C. Huff (1940). He demonstrated that some helictites, at least, are tubular and grow at the free end from solutions traveling along narrow interior channels. By placing a porous plate over the mouth of a bottle containing sodium thiosulphate and inverting, Huff obtained artificial salt "flowers" comparable to natural "gypsum flowers." These "flowers" were, therefore, formed essentially in the same manner as the salt ribbons on my bowl.

Although salt ribbons of several kinds have thus been observed before, I do not know of any paper that notes the similarity of the phenomenon to the formation of ice ribbons. The latter are thin, white, curly structures that grow to a length of 10 or more centimeters from the dead stems of some plants just above the ground in the early frosty period of winter before the ground is thoroughly frozen. Sir John

[1] Published by permission of the Director, Geological Survey, U. S. Department of the Interior. Received November 16, 1945.

Herschel (1833) was probably the first to report this phenomenon, having observed ice ribbons on thistles and heliotropes. John LeConte (1877) found them on the stems of a species of composite, *Pluchea* [*Conyza*]. More recently W. J. Humphreys (1925) has reported fine examples seen on the stems of the mint, *Cunila origanoides*, sometimes called dittany and stonemint. Perhaps the most spectacular specimens, however, are those described by W. N. Clute (1927; 1932) from a composite called white crownbeard, *Verbesina virginica*, which seems to be the preeminent ice plant. Although these and other papers have speculated on the process by which ice ribbons are formed, some details remain unexplained. In general, however, there is agreement that the ground must remain warm enough to prevent soil moisture from freezing, thus permitting it to flow upward in the stems of plants; and that the temperature, pressure, and humidity of the air must be such that water permeating



FIGS. 1–4.—Salt ribbons on the outer glazed surface of a bowl (millimeter scale indicates magnification): 1, Surface of the bowl showing isolated ribbons and a polygonal pattern in the lower left corner; 2, 4, enlarged views of polygonal patterns from other portions of the bowl; 3, side view of ribbons in a polygonal pattern. The patterns are governed by the cracks in the glazing. Photographs by Lloyd G. Henbest.

a plant stem will freeze as fast as it appears at or just beneath the surface of the stem. Roots are apparently little, if any, involved in this process, for stems that are carefully cut and replaced in the ground will produce ribbons. Passage of the water up through and across the stem is probably by way of the vascular tissues, but whether the death of the stem has enlarged or altered these passages so as to permit a freer flow of water is unknown. Ribbons may be produced on successive nights from the same stem, raising as much as 60 cc of water each night. The flow of water radially across the stem apparently takes place along the medullary rays, and the ice ribbons begin as thin crystals at the ends of these rays beneath the surface of the stem. The species of plants that habitually produce ice ribbons should be examined to see whether their medullary rays resemble one another closely.

Salt ribbons and ice ribbons thus seem to have much in common mechanically in their development. The ice crystals or pillars surmounted by particles of earth or rock, seen frequently in open ground during mild, alternately thawing and freezing winter weather, are coarser structures, but evidently develop in somewhat the same manner as ice ribbons from the stems of plants, namely, by the freezing of water as fast as it rises from pores in the ground. In quite a different category from ice ribbons belong ice stalactites, stalagmites, and foam "volcanoes," described by H. J. Schaefer (1944). The latter resemble geyser cones in outline and appearance, but are fragile structures formed by the freezing, under proper atmospheric conditions, of foam pushed up slowly but continuously through holes in ice below waterfalls.

For bibliographic aid in preparing this paper I am grateful to R. C. Aldredge, librarian at the Weather Bureau, U. S. Department of Commerce, and to E. P. Henderson, of the U. S. National Museum.

REFERENCES

CLUTE, W. N. *A new frost flower.* Amer. Bot. **33**: 1, 2. 1927.

———. *Frost flowers.* Amer. Bot. **38**: 1–12. 1932. (See bibliography.)

HERSCHEL, Sir JOHN F. W. *Notice of a remarkable deposition of ice round the decaying stems of vegetables during frost.* London and Edinburgh Philosoph. Mag. and Journ. Sci. 1833: 110, 111, pl. 2, figs. A, B, C. Feb., 1833.

HUFF, L. C. *Artificial helicites and gypsum flowers.* Journ. Geol. **48**: 641–659. 1940.

HUMPHREYS, W. J. *Ice ribbons.* Sci. Monthly **21**: 511–514. 1925.

JANSSEN, R. E. *Pickle helicites.* Sci. Monthly **58**: 345–347. 1944.

LECONTE, JOHN. *Ice fingers around the stems of plants.* Sci. Amer. **36**: 212. Apr. 7, 1877.

SCHAEFER, VINCENT J. *Winter magic.* Nat. Hist. **53**: 16–20. Jan., 1944.

ENTOMOLOGY.—*Synoptic revision of the United States scarab beetles of the subfamily Dynastinae, No. 2: Tribe Oryctini (part).*[1] LAWRENCE W. SAYLOR, Research Associate, California Academy of Sciences.

This paper continues the series on United States dynastine scarab beetles and includes the three genera differentiated in the following key:

1. Apical margin of posterior tibia evenly truncate, never with angulations or teeth (lateral view); real apex of clypeus *beyond* (i.e., apical of) the apparent carinate apex; front male tibia frequently edentate. *Cheiroplatys* Hope

   Apical margin of posterior tibia never evenly truncate, always with several angulations, or teeth; apical carina of clypeus, *if* present, right *at* the apical margin.....2

2. Mandibles always large, always well exposed, always armed externally with teeth or else square in outline (*cessus*); apical margin of posterior tibia usually with 1 or 2 sharp angulations or 1 to 3 or 4 teeth. *Strategus* Hope

   Mandibles usually hidden beneath clypeus, or only edges exposed, and always unarmed externally; usually with 5 to 9 small to large teeth on outer apical margin of posterior tibia.....*Xylorycles* Hope

Genus **Cheiroplatys** Hope

Cheiroplatys Hope, 1837, p. 84; Lacordaire, 1856, p. 411; Arrow, 1937b, p. 37.

Orizabus Fairmaire, 1878, p. 260; Bates, 1888, p. 320; Casey, 1915, p. 222.

[1] Received September 27, 1945.

Pseudaphonus Casey, 1915, p. 210; Arrow, 1937b, p. 35.
Aztecalius Casey, 1915, p. 228.

Arrow lists 32 species in this genus in his 1937 Catalogue; many of these are synonyms and are here listed as such, and additional ones from our faunas will probably prove to be synonymous. This genus is one of those that occur apparently only in the American and Australian regions, and the majority of the species are from New Guinea and Australian localities. There is a great deal of variation in the thoracic armature (presence or absence of a tubercle and strong fovea) as well as in the height and width of the one or two head carinae, which may be much worn in numerous individuals, thus giving them a superficially different appearance; such is also true of the front tibia, which normally in the male of some species, and infrequently also in the female, may be nontoothed externally, but broadly rounded or uni- to bisinuate.

KEY TO UNITED STATES CHEIROPLATYS

1. Size very large (21–24 mm); pygidial puncturation variable, from nearly smooth to densely subrugosely punctate, but most commonly the center disc finely and not densely punctate; male front tibia usually rounded externally and not toothed; clypeal apex with short carina, which is usually interrupted at middle and obtusely bidentate, rarely nearly entire; clypeal base with a small to large tubercle, this rarely semicarinate but then the hardly obvious carina obsolete at sides; center-apex of thorax deeply foveate and tuberculate, or entirely plane (*i.e.*, either evenly convex or flat)..... *clunalis* (LeConte)
Size much smaller (14–18 mm); clypeal carinae variable, not as above; thorax only rarely foveate or tuberculate.....2
2. Clypeus strongly narrowed in front, apical carina much shorter than half the length of clypeus at base, and strongly elevated and usually narrowly interrupted at middle, thus appearing bidentate; front with a large tubercle, this sometimes a little finely carinate to each side, but never with a strong raised carina; pygidium always very densely and finely cribrately punctate over entire disc, rarely a little sparser at center. *pyriformis* (LeConte)
Clypeus very broad in front, apical carina much more than half the length of the posterior carina and always raised, entire and straight; thorax in males usually foveate at midapex and tuberculate or not, usually plane in females; pygidial sculpture cribrate and close at sides, most specimens with small to large midcenter discal area smooth, or with finely sparsely punctate area. *isodonoides* (Fairmaire)

Cheiroplatys clunalis (LeConte)

Aphonus (?) *clunalis* LeConte, 1856, p. 23; Bates, 1888, p. 321.
Cheiroplatys verticalis Fall, 1905, p. 272. (New synonymy.)
Orizabus clunalis (LeConte), Casey, 1915, p. 226.
Orizabus ligyrodes Horn, 1885, p. 125.
O. sallei Fairmaire, 1878, p. 262.
O. marginatus Fairmaire, 1878, p. 262. (New synonymy.)
O. cultripes Fairmaire, 1878, p. 261. (New synonymy.)
O. frontalis Casey, 1915, p. 226. (New synonymy.)
O. ponderosae Casey, 1915, p. 228. (New synonymy.)
O. parvitarsis Casey, 1915, p. 227. (New synonymy.)
O. snowi Horn, 1885, p. 124. (New synonymy.)

It is easy to see why so many names have been proposed for our United States *clunalis* when one considers the great amount of variability here in the width between the clypeal teeth; the pygidial puncturation; and the presence or absence of, as well as the depth of, the front thoracic concavity. In some specimens the "apical" clypeal transverse carina (which forms the two lateral teeth) is much reduced at the middle, leaving the two ends as rather large isolated teeth; in others the carina is much less reduced medially and the teeth are smaller and much closer together. Some females have the thoracic concavity entirely lacking and the midcenter apex reduced to the faintest tubercle, while others are plane; in fact, in one series from New Mexico (58 specimens), 22 totally lacked the thoracic fovea and of these 22 seven also lacked all traces of a tubercle, giving some idea of the variability of these characters. In several dissected females (including Casey's type of *parvitarsis*) the front tibia are edentate as in most males. Two male examples from Arizona have the clypeal apex much narrower than usual and the two apical teeth so close as to be touching basally, and more reflexed than usual; in all other external characters as well as the genitalia, however, they are typical *clunalis*. I have seen very large series from Texas, New Mexico, Arizona, and Mexico (Hidalgo and Pachuco); also recorded from many other Mexican localities under the names of the synonyms.

Bates separated *cultripes* from *clunalis* only on the nonmargined thoracic base; a Mexican series from Temascaltepec, D. F. (Hinton collector), is equally divided between specimens having the thoracic base margined and not margined, with all intermediates, and as Bates suspected at the time of describing *cultripes* it cannot be separated from *clunalis*.

Cheiroplatys pyriformis (LeConte)

Bothynus pyriformis LeConte, 1848, p. 21; Casey, 1915, p. 211 (*Pseudaphonus*); Ritcher, 1944, p. 28 (*Pseudophonus*) (larvae).
Pseudaphonus ovalis Casey, 1915, p. 212.
P. repens Casey, 1915, p. 212.
P. debiliceps Casey, 1915, p. 213.
P. lucidus Casey, 1915, p. 213.
P. puncticollis Casey, 1915, p. 335.

This species is found rather uncommonly in the Southwest; I have seen it from Colorado and New Mexico only. The variable characters are mentioned in the species key. The male genitalia are nearly exactly similar in shape to *isodonoides*, and it is possible that when larger series are studied the two species may prove to be variants of one species.

Cheiroplatys isodonoides (Fairmaire)

Orizabus isodonoides Fairmaire, 1878, p. 263; Bates, 1888, p. 322 (*Cheiroplatys*); Casey, 1915, p. 228 (*Aztecalius*).

I have seen good series from Mexico and one female from Colorado which I cannot separate from Mexican females of this species. The two large and entire clypeal carinae are very distinctive.

Cheiroplatys brevicollis (Prell)

Orizabus brevicollis Prell, 1914, p. 204.

Prell described this species on three male specimens from "California (W. Horn) and Mexico"; the species was compared to the Mexican *fairmairei* Bates and varied in size from 20 to 22 mm, and so on size it could be confused only with *clunalis*, from which the male genitalic figures will readily separate it. I doubt that the species occurs in the United States but believe that the locality "California" refers to Baja California.

Genus **Strategus** Hope

Strategus Hope, 1837, p. 87; Casey, 1915, p. 238; Arrow, 1937b, p. 35; Ritcher, 1944, pp. 34–38 (larvae).
Anastrategus Casey, 1915, p. 231; Arrow, 1937b, p. 35.
Strategodes Casey, 1915, p. 245.
Strategopsis Chapin, 1932, p. 302.
Scatophilus Chapin, 1932, p. 302.

This American genus is catalogued at 32 species at present and is limited to the West Indies and the American continents. Five species occur in the United States. Various genera or subgenera have been proposed, and to one unfamiliar with the many species in the genus these may seem valid; this is especially true of those species in which both sexes have the thorax and head entirely unarmed (*cessus* etc.) as opposed to those where the male is usually strongly armed. Also, *mormon* appears to be quite distinct in the elongated mandibular tooth as well as the frequently unarmed male head and thorax, but all intermediates occur so that these names do not stand up. Also, as Arrow has rightly pointed out (1937b), genera based on characters entirely sexual are of no value, since the purpose of taxonomy is to rightly place all specimens that may come to hand, and if it is impossible to place the females of many species unless associated with the males, then such genera are obviously of no value whatever.

The larvae feed on decaying vegetable matter in soil rich in humus, as well as in rotten wood, and on roots of oak and other trees; detailed life history and larval character references, where known, are listed under the individual species.

KEY TO UNITED STATES STRATEGUS

(Last abdominal sternite of males widely transversely emarginate one-half or one-third before the apical margin, the line of emargination with long erect cilia; females with last ventral plane, ciliate at apex.)

1. Middle mandibular tooth very long and narrow, nearly twice as long as the others and very sharp and suddenly narrowed for the last half of its length; color always rufocastaneous; male with short horn on fore thoracic margin and two faint, widely separated tubercles at midapex; female thorax tuberculate before midapex; Kansas, Utah, Texas..... *mormon* Burmeister
   Mandibles variable, never suddenly narrowed at middle or very long and narrow.....2
2. Thorax never with any suggestion of horns in either sex, midapex with *two* small nearly contiguous tubercles; mandibles from above nearly square, in some specimens with a *faint* sinuation to apical and lateral edge;

color normally piceocastaneous; Arizona and New Mexico..... *cessus* LeConte

Thorax horned or not, or midapex either plane or with *one* erect tubercle or small horn; mandibles not as above.....3

3. Thorax with small tubercle at midapex; thoracic disc without further horns in either sex; mandibles with middle tooth much broader and larger than others but very obtuse; color normally rufous to rufocastaneous, rarely rufopiceous; female pygidial apex before and each side of apex entirely impunctate and smooth; size 25–28 mm; North Carolina and Florida..... *splendens* Beauvois

Thorax and mandibles not as above or if somewhat similar (female) the size either larger or pygidium before apex and at each side of apex coarsely setiferously punctate.....4

4. Size small (24–32 mm); males with the three thoracic horns normally long and of nearly equal width near base and throughout; in male minors the horns sometimes short but always rather narrow at base, and disc at center base punctured and smooth, never coarsely cribrate; females with thoracic armature as in *julianus* but thorax noticeably flatter and base never coarsely cribrate before the margin, at most with a few or a single line of coarse punctures; East States to Florida and west to Texas. *antaeus* (Drury)

Size large (37–46 mm); males with horn arising from midapical thoracic margin very short to very long, and each side of thoracic disc before middle varying from two large and well-separated gibbosities to two long horns; if horned, these always much wider basally than apical horn; base thorax coarsely cribrate each side of middle base; females with a small preapical tubercle at middle thorax, and without the posterior gibbosities; thorax just before basal margin on each side of middle very coarsely cribrate; Mississippi and West to Texas and Arizona, to Central and South America. *julianus* Burmeister

Strategus julianus Burmeister

Strategus julianus Burmeister, 1847, p. 133; Casey, 1915, p. 242; Nevermann, 1933, p. 181; Ritcher, 1944, p. 35 (larvae).
S. gaillardi Casey, 1915, p. 244.
S. roosevelti Casey, 1915, p. 241.
S. arizonicus Schaeffer, 1915, p. 47; Casey, 1915, p. 252.
S. tarsalis Casey, 1915, p. 243. (New synonymy.)

The adults of this common and very wide-ranging species are commonly attracted to light; ranges from Mississippi west and through Central and South America. Casey's *tarsalis* was separated by him because the apex of the hind tibia of the unique female type lacked the usual center tooth, but in a female from northern Mexico the left tibia is as Casey described, but the right tibia has the usual small tooth, and specimens from other localities approach it; the tooth is readily worn in specimens that dig a lot.

Strategus mormon Burmeister

Strategus mormon Burmeister, 1847, p. 130; Knaus, 1924, p. 142; Knaus, 1916, p. 79 (biology); Casey, 1915, p. 251 (*Strategodes*).

The unusually long and slender middle mandibular tooth is very distinctive; the species is rather uncommon in most collections because of its somewhat restricted distribution, being known from Kansas, Utah, and Texas.

Strategus splendens Beauvois

Strategus splendens Beauvois, 1805, p. 89; Ritcher, 1944, p. 37 (larvae); Casey, 1915, p. 237 (*Anastrategus*).
S. bosci Beauvois, 1805, p. 89.
Anastrategus carolinensis Casey, 1915, p. 237.
A. cognatus Casey, 1915, p. 236.

A rather uncommon species known from North Carolina to Florida. As with *cessus*, the two sexes here are similar in thoracic sculpturing.

Strategus cessus LeConte

Strategus cessus LeConte, 1866, p. 382; Casey, 1915, p. 233 (*Anastrategus*).
Anastrategus durangoensis Casey, 1915, p. 234.
A. inflatus Casey, 1915, p. 234.
A. tantalus Casey, 1915, p. 235.
A. caricauda Casey, 1915, p. 233.

Recorded and seen only from Arizona, New Mexico, and northern Mexico. The thorax is unarmed in both sexes and the nearly or quite square mandibles (dorsal view) are very characteristic in fresh specimens, before they have worn the mandibular margins through digging. Small females are easily separated from female *Aphonides dunnianus* by having the thorax foveate, the mandibles not rounded externally, and the basal clypeal carina not entire.

Strategus antaeus (Drury)

Scarabaeus antaeus Drury, 1773, p. 74; Arrow, 1937b, p. 37 (*Strategus*); Forbes, 1906, p. 34 (biology); Manee, 1908, p. 286 (biology); Ritcher, 1944, p. 34 (larvae); Casey, 1915, p. 234 (*Strategus*).
Scarabaeus maimon Fabricius, 1775, p. 10.
Strategus syphax Burmeister, 1847, p. 131.

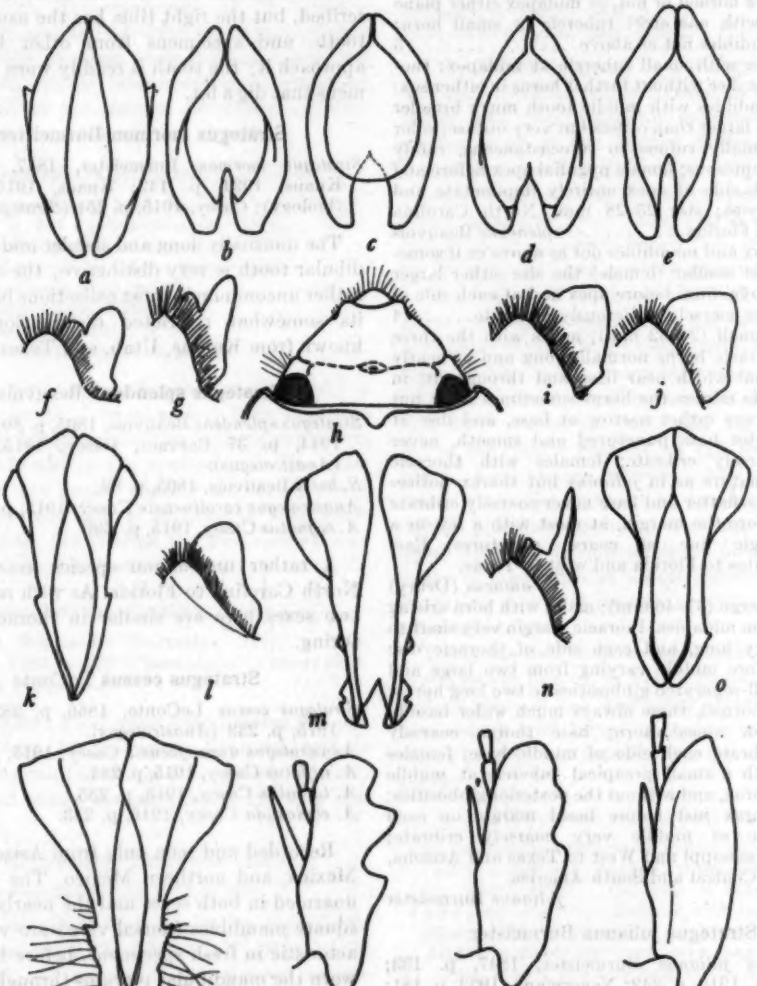


FIG. 1.—(*f–g, i–j, l, n,* dorsal views of mandible; *h,* head of male; *q–s,* front male tibia; remainder are male genitalia.) *a, Strategus julianus; b, S. mormon; c, S. splendens; d, S. antaeus; e, S. cessus; f, S. splendens; g, S. antaeus; h, Cheiroplatys clunalis; i, S. cessus; j, S. cessus; k, C. isodonoides; l, S. julianus; m, C. brevicollis; n, S. mormon; o, C. clunalis; p, Xylorycles jamaicensis; q, C. pyriformis; r, C. isodonoides; s, C. clunalis.*

S. houstensis Knaus, 1925, p. 182.
Strategodes atrolucens Casey, 1915, p. 247.
Strategodes pinorum Casey, 1915, p. 248.
Strategodes septentrionis Casey, 1915, p. 249.
Strategodes divergens Casey, 1915, p. 246.
Strategodes sinuatus Casey, 1915, p. 250.
Strategodes semistriatus Casey, 1915, p. 250.

This is the commonest, most variable, and widest spread of the United States species, occurring from Rhode Island to Florida, west to Texas.

Genus Xyloryctes Hope

Xyloryctes Hope, 1837, p. 90; Bates, 1888, p. 323; Casey, 1915, p. 252; Ritcher, 1944, p. 38 (larvae).

Fifteen species of this genus have been described, two of them West Indian in distribution, eight purely Central America, and the remaining eight names all applying to the common and very variable United States species called *jamaicensis* Drury.

Xyloryctes jamaicensis (Drury)

Scarabaeus jamaicensis Drury, 1773, p. 74; Bates, 1888, p. 323 (*Xyloryctes*); Casey, 1915, p. 254 (*Xyloryctes*).
S. satyrus Fabricius, 1775, p. 12; Bates, 1888, p. 323; Hamilton and Hagen, 1884, p. 107, p. 239 (as *Xyloryctes*) (biology); Weiss, 1921, p. 193 (as *Xyloryctes*) (biology), Ritcher, 1944, p. 38 (as *Xyloryctes*) (larvae).
S. americanus Beauvois, 1805, p. 75.
Xyloryctes faunus Casey, 1895, p. 609; 1915, p. 256. (New synonymy.)
X. hebes Casey, 1915, p. 257. (New synonymy.)
X. lacustris Casey, 1915, p. 255. (New synonymy.)
X. tenuicornutus Casey, 1915, p. 255. (New synonymy.)
X. obsolescens Casey, 1915, p. 256. (New synonymy.)

Ranges throughout the Eastern States and West to Arizona and Texas. The Arizona specimens are very close to the common Mexican *thestalus* Bates in that the male genitalia are identical and the central thoracic lobe is more protuberant than in the Eastern United States specimens, and the species are separable only on the much smoother elytral sculpture of *thestalus*, which must be listed as only a subspecies of the earlier-described *jamaicensis*. Much confusion has existed as to the proper name for this species, and Bates and others refused to accept the earlier name *jamaicensis*, but rules of priority demand its adoption, even though it is unappropriate owing to the species being much more common in the United States than in Jamaica. Most of Casey's types are male minors; nearly all the eastern examples have the male central thoracic lobe obsolete or nearly so, whereas the western ones usually have this lobe obvious to moderate in size. It varies greatly in size, ranging from 21 to 33 mm in length.

LITERATURE CITED

ARROW, G. J. Coleopterorum catalogus, pars 156: 44–46, 60–61, 74–77. 1937a.
———. Trans. Ent. Soc. London **36**: 35–37. 1937b.
BATES, H. W. Biologia Centrali-Americana, Coleoptera **2** (2): 320–323. 1888.
BEAUVOIS, A. M. J. PALISOT DE. Insectes recueilles en Afrique et en Amérique: 75, 89. 1805.
BURMEISTER, H. Handbuch der Entomologie **5**: 130–133. 1847.
CASEY, T. L. Ann. New York Acad. Sci. **8**: 609. 1895.
———. Memoirs on the Coleoptera **6**: 222–228, 231–257. 1915.
CHAPIN, E. A. Ann. Ent. Soc. Amer. **25**: 302. 1932.
DRURY, D. Illustrations of exotic entomology **2** (Index): 74. 1773.
FABRICIUS, J. C. Systema entomologiae: 10–12. 1775.
FAIRMAIRE, L. Rev. et Mag. Zool., ser. 3, **6**: 260–263. 1878.
FALL, H. C. Can. Ent. **37**: 272. 1905.
FORBES, S. A. Ent. News **17**: 34. 1906.
HAMILTON, J., and HAGEN, H. A. Can. Ent. **16**: 107, 239. 1884.
HOPE, F. W. The coleopterist's manual **1**: 84–90. 1837.
HORN, G. H. Trans. Amer. Ent. Soc. **17**: 124–125. 1885.
KNAUS, W. Bull. Brooklyn Ent. Soc. **11**: 79. 1916.
———. Journ. New York Ent. Soc. **32**: 142. 1924.
———. Pan-Pacific Ent. **1**: 182. 1925.
LACORDAIRE, J. T. Genera des coléoptères **3**: 411. 1856.
LECONTE, J. L. Journ. Proc. Acad. Nat. Sci. Philadelphia, ser. 2, **1**: 21. 1848.
———. Proc. Acad. Nat. Sci. Philadelphia **8**: 23. 1856.
———. Proc. Acad. Nat. Sci. Philadelphia **18**: 382. 1866.
MANEE, A. H. Ent. News **19**: 286. 1908.
NEVERMANN, W. H. F. Ent. Blätter **29**: 181. 1933.
PRELL, H. Ent. Mitteil. **3**: 204. 1914.
RITCHER, P. O. Kentucky Agr. Exp. Stat. Bull. 467: 28–38. 1944.
SCHAEFFER, C. F. A. Journ. New York Ent. Soc. **23**: 47. 1915.
WEISS, H. B. Ent. News **32**: 193. 1921.

ENTOMOLOGY.—*Nine new species of* Metachroma *(Coleoptera) from the West Indies.*[1]

DORIS H. BLAKE. (Communicated by S. F. BLAKE.)

The following species of *Metachroma* Dejean were all collected by P. J. Darlington except one, which was taken by J. Acuña in Cuba. Two species are from Cuba and one is from Puerto Rico. The remainder are from the Dominican Republic and are the first ones to be described from that country.

Metachroma laevius, n. sp.
Fig. 1

Nearly 4 mm long, broadly oblong oval, very shiny, head and prothorax reddish, antennae, elytra, legs, and undersurface yellowish brown; occiput of head and prothorax polished, elytra with striate punctures rather indistinct and nearly obsolete over apical half. Anterior and posterior thighs mucronate.

Head with interocular space about half its width, upper half smooth, polished and nearly impunctate, lower half below the transverse groove rather shallowly punctate, a short but not marked median groove. Antennae entirely pale, second joint as long as third, joints 4–6 subequal and not so thick as distal joints. Prothorax about a third wider than long with arcuate sides and a tooth at each corner, disc a little contracted behind the head, smooth, polished and with scarcely discernible, fine, scattered punctation. Elytra with the striate punctures indistinct over the basal callosities and sides and toward the apex; surface very shiny, paler than prothorax. Body beneath shiny, very lightly pubescent. Anterior femora with a large tooth, posterior with a small tooth. Claws toothed. Length 3.7 mm; width 1.9 mm.

Type male, Mus. Comp. Zool. no. 27350; 2 paratypes, one in the U.S. National Museum (no. 57744).

Type locality.—Mount Diego de Ocampo, Dominican Republic, 3,000–4,000 feet altitude, collected in July 1938 by P. J. Darlington.

Other localities.—Puerto Plata, Dominican Republic, collected by Donald Hurst.

Remarks.—This is one of the parallel-sided species of *Metachroma* with the prominently toothed femora, the first of this sort to be recorded from Hispaniola.

Metachroma acunai, n. sp.
Fig. 2

Between 3.5 and 4 mm in length, oblong ovate, shining reddish brown, the head with a darker occiput, each elytron with four more or less distinct spots down the middle, the lowest one near the suture; prothorax sparsely but distinctly punctate, elytra with the striate punctures distinct throughout.

Head with interocular space approximately half its width, lower front above labrum and below tubercles coarsely and densely punctate; tubercles well marked by a median line and the groove extending about the inner margin of eyes; occiput finely and not densely punctate and tending to be darker in color. Antennae extending at least to the middle of the elytra, the two basal joints longer and thicker than joints 3–6, joints 7–11 longer and thickened and with the apices dark. Prothorax less than a third wider than long, with arcuate sides, and a small tooth at each angle, disc a little depressed anteriorly and finely and not densely punctate. Elytra with striate punctures distinct to the apex, a little coarser in depression below the humeri; each elytron with four spots, in one specimen, the female, small and indistinct; these spots located (1) in the middle of the base, (2) just below the basal spot a little more toward the humerus, (3) in the middle of the elytron, (4) near the suture at about two-thirds the distance from base to apex. Body beneath shining reddish brown, faintly pubescent, femora without teeth, tibiae of middle and posterior pairs emarginate near apex; claws toothed. Length 3.6–3.8 mm; width 1.3–1.5 mm.

Type male, U.S.N.M. no. 57745; 1 paratype (female) in Museum of Comparative Zoology.

Type locality.—Moa, Oriente Province, Cuba, collected April 13–22, 1945, by J. Acuña.

Remarks.—The distinct punctation of the elytra throughout separates this from other small related West Indian species. In markings it resembles *M. rosae* Bryant from Jamaica, but specimens from Jamaica tentatively identified as the latter species are larger, more robust, and with a nearly smooth prothorax having well-defined markings. This species is named

[1] Received November 15, 1945.

after Mr. J. Acuña, who has sent in a number of interesting specimens.

Metachroma barahonense, n. sp.

Fig. 3

About 4 mm in length, broadly oblong, shining, yellow-brown, with a deep brown head and prothorax, the latter with a large piceous spot on each side, undersurface deep brown; prothorax densely and finely punctate; elytral striae impressed.

Head with a deep median groove extending nearly to the occiput but with little trace of transverse groove between the eyes, the groove about eyes distinct; interocular space less than half width of head, eyes large; lower front densely punctate; upper part of head smoother, with a few inconspicuous punctures; front pale. Antennae extending below humeri, the five distal joints deeper in color than the more slender basal joints. Prothorax not quite twice as broad as long, with arcuate sides and a seta-bearing tooth at each corner; disc shining and finely and densely punctate except about the edges; a large piceous area on either side. Elytra shining yellow-brown without markings, elytral striation impressed, giving a lightly costate appearance; humeri moderately prominent, a slight basal callosity and a deep intrahumeral sulcus. Body beneath deep reddish brown with the tip of the abdomen paler, lightly pubescent, legs pale, femora not mucronate, claws toothed. Length 4.2–4.5 mm; width 2.3 mm.

Type female and 1 paratype (female), Mus. Comp. Zool. no. 27359; 1 paratype (female), U.S.N.M. no. 57746.

Type locality.—Barahona, Dominican Republic, collected in September 1938 by P. J. Darlington.

Remarks.—This is one of the broadly oblong species and is without markings. The finely and densely punctate prothorax and the more distinctly punctate elytra distinguish it from the other parallel-sided species, *Metachroma laevius.*

Metachroma brevistriatum, n. sp.

Fig. 4

About 2.5 mm in length, oblong oval, shining pale yellow-brown with the tips of the last seven antennal joints darker; the prothorax punctate in the middle, smooth on the sides, the elytra only sparsely striate punctate about the scutellum and a little below the basal callosity, the apical half usually entirely smooth.

Head with interocular space about half its width, polished and with shallow punctation, very little trace of a median vertical groove, the transverse groove between and about eyes well marked. Antennae reaching nearly to the middle of the elytra, first and second joints equal, joints 3–6 slender, 7–11 thicker and more pubescent, 5–11 with darkened tips. Prothorax not twice as wide as long, with arcuate sides and an acute tooth at each corner; disc somewhat contracted anteriorly behind the head, with a double row of punctures in the depression on either side. Punctation not dense or coarse and entirely lacking on the sides. Elytra polished, usually with only traces of striate punctures on the apical half, the only row reaching the apex being the one next to the suture, the others represented by only a few short lines below and about the basal callosities. Elytra slightly widened in the apical half. Body beneath pale, the abdomen occasionally deeper in coloration, shining, nearly glabrous. Middle and posterior tibiae emarginate, claws toothed. Length 2.3–3 mm; width 1.4–1.8 mm.

Type male and 6 paratypes (3 males, 3 females), Mus. Comp. Zool. no. 27352; 1 paratype (male), U.S.N.M. no. 57747.

Type locality.—San José de las Matas, Dominican Republic, 1,000–2,000 feet altitude; collected in June 1938 by P. J. Darlington.

Other localities.—Constanza, 3,000–4,000 feet, Villa Altagracia, Dominican Republic; collected in 1938 by P. J. Darlington.

Remarks.—The small size, pale coloration, and mere vestiges of pronotal and elytral punctation make this species distinctive.

Metachroma obesum, n. sp.

Fig. 5

About 2.5 mm in length, ovate, with yellow-brown elytra and reddish-brown head, prothorax, legs, and undersurface, antennae with the seven distal joints dark at the base; elytra with a spot on the humerus connected to another spot below, two more on the side going down to the margin, and a row of four across

each elytron below the middle; prothorax distinctly punctate, elytra with striate punctation in basal half, apex smooth.

Head coarsely alutaceous throughout, a short deep cleft in middle between the eyes and the usual groove extending across and about the eyes; a dark occipital spot running down to the vertex, interocular space more than half the width of the head. Antennae extending below the humeri, four basal joints pale, remainder dark at the base, second and third joints about equal in length, joints 4–6 subequal, rest much thicker and longer. Prothorax more than a third wider than long with rounded sides and a tooth at anterior and basal angles; surface alutaceous and distinctly but not densely punctate, smooth near the margin; in color deep reddish brown with irregular darker median areas. Scutellum reddish brown. Elytra shining pale yellow-brown with piceous spotting; one on the humerus, three below the humerus, a transverse row from the margin, four other small spots on each elytron forming an interrupted fascia across elytra below the middle. Striate punctation visible nearly to the middle of the elytra next to the suture, but vanishing in apical half and on sides a short way below the humeri. Body beneath shining reddish brown, nearly glabrous, the middle and posterior tibiae emarginate, claws toothed. Length 2.5 mm; width 1.5 mm.

Type female, Mus. Comp. Zool. no. 27353.

Type locality.—Constanza, 3,000–4,000 feet altitude, Dominican Republic; collected in August 1938 by P. J. Darlington.

Remarks.—This is an unusually broadly ovate species and conspicuous because of its elytral spotting and entirely smooth apical half.

Metachroma darlingtoni, n. sp.

Fig. 6

Between 4 and 5 mm in length, broadly oblong oval, shining, pale yellow-brown with a dark streak down the middle of the head, four or two (coalescing) spots across the pronotum, and small irregular spots across the base and below the middle of the elytra; legs banded, and undersurface more or less darkened; elytral striae rather deeply impressed.

Head with interocular space less than half the width of the head, eyes large, a dark streak down the middle of front, and sometimes behind the eyes, jaws also dark; a short median groove and a well-marked one between and about the inner margin of eyes; upper part of head shiny, some traces of obsolete punctation; lower front alutaceous and more distinctly punctate. Antennae extending below the humeri, second joint as long as third, shorter than fourth, the five distal joints a little darker and heavier. Prothorax not quite twice as broad as long with rounded sides and a seta-bearing tooth at each corner; surface smooth, shining, impunctate; lower margin slightly sinuate; pale yellow-brown with two or four spots across the middle. Elytra pale and shining with two or three spots across at base, the largest on the humeri, and a transverse row of small irregular spots below the middle, sometimes another between the basal and apical row in the middle; striation rather deeply impressed, giving a somewhat costate appearance to the elytra; humeri prominent and a distinct basal callosity. Body beneath varying in coloration but in two of the three specimens mostly dark piceous, in the third specimen the abdomen pale. Legs pale, both femora and tibiae with dark spot; rather pubescent; an inconspicuous tooth on anterior and posterior femora; claws toothed. Length 4.2–5.2 mm; width 2–2.6 mm.

Type female, Mus. Comp. Zool. no. 27354; one paratype (female) U.S.N.M. no. 57748.

Type locality.—Constanza to Jarabacoa, Dominican Republic, 2,000–4,000 feet altitude; collected in August 1938 by P. J. Darlington.

Other locality.—Villa Altagracia, Dominican Republic; collected in July 1938 by P. J. Darlington.

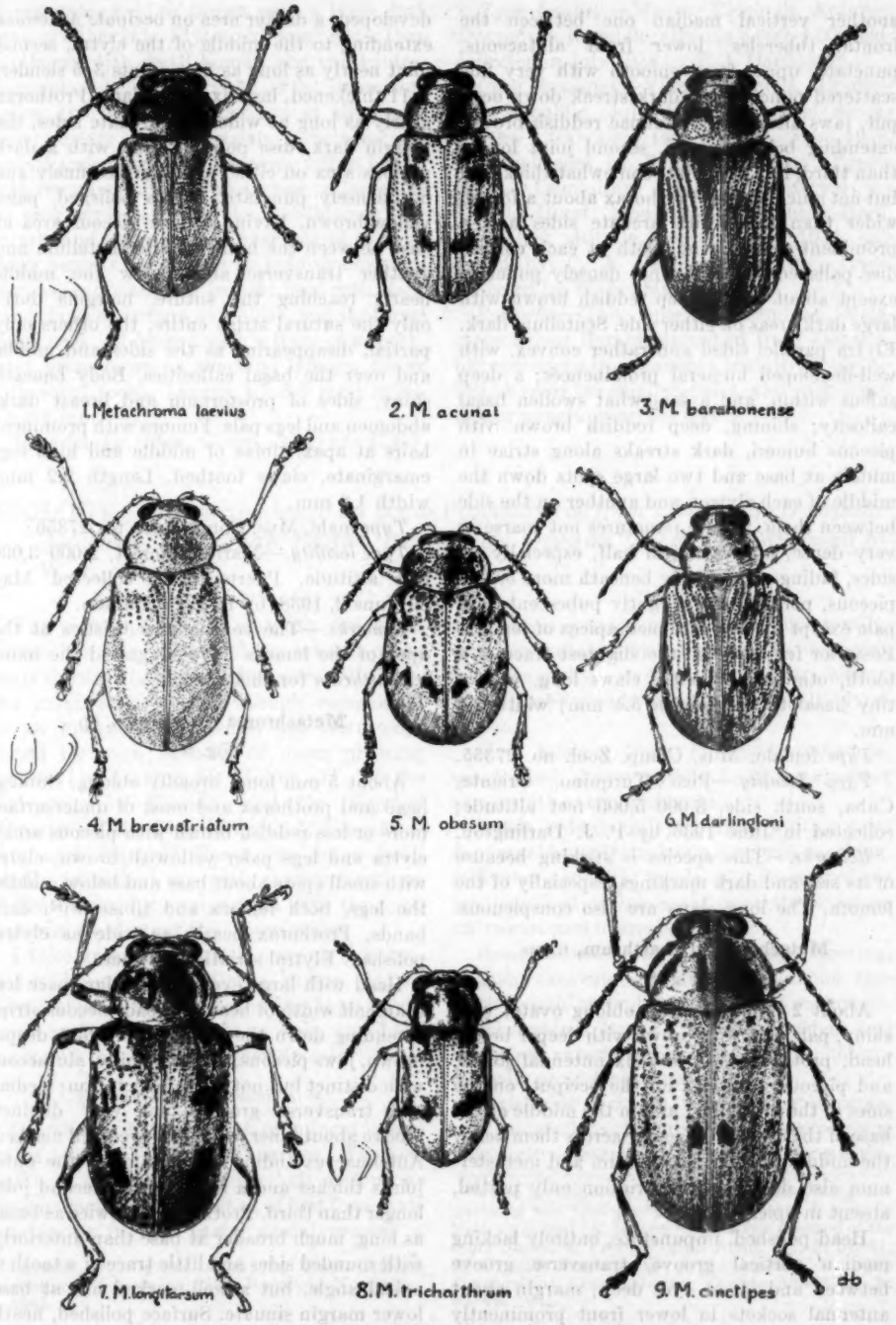
Remarks.—Deeply impressed striae, spotted legs and large eyes are the characteristics of this pretty species.

Metachroma longitarsum, n. sp.

Fig. 7

About 5.5 mm in length, oblong, shining, deep reddish brown with a dark streak down head, two large spots on each side of pronotum, darkened humeri, and two spots down the middle of each elytron; undersurface and apices of femora also dark; elytral striae not impressed, punctures not dense and becoming indistinct toward apex.

Head with large eyes, interocular space less than half width of head, a deep groove between eyes and about inner margin of eyes, and



FIGS. 1–9.—New species of *Metachroma* from the West Indies.

another vertical median one between the frontal tubercles; lower front alutaceous, punctate, upper front smooth with very fine scattered punctures, a dark streak down occiput, jaws also dark. Antennae reddish brown, extending below humeri, second joint longer than third, last five joints somewhat thickened but not much longer. Prothorax about a fourth wider than long, with arcuate sides and a prominent seta-bearing tooth at each corner; disc polished, finely but not densely punctate except about edges; deep reddish brown with large dark areas on either side. Scutellum dark. Elytra parallel sided and rather convex, with well-developed humeral prominences; a deep sulcus within, and a somewhat swollen basal callosity; shining, deep reddish brown with piceous humeri, dark streaks along striae in middle at base and two large spots down the middle of each elytron and another on the side between them. Striate punctures not coarse or very dense, and in apical half, especially on sides, fading away. Body beneath more or less piceous, polished, very lightly pubescent; legs pale except for the darkened apices of femora. Posterior femora with the slightest trace of a tooth, otherwise smooth; claws long, with a tiny basal tooth. Length 5.4 mm; width 2.8 mm.

Type female, Mus. Comp. Zool. no. 27355.

Type locality.—Pico Turquino, Oriente, Cuba, south side, 3,000–5,000 feet altitude; collected in June 1936 by P. J. Darlington.

Remarks.—This species is striking because of its size and dark markings, especially of the femora. The long claws are also conspicuous.

Metachroma tricharthrum, n. sp.

Fig. 8

About 2 mm in length, oblong ovate, very shiny, pale yellowish brown with deeper brown head, prothorax and last six antennal joints, and piceous markings on the occiput, on the sides of the prothorax, and in the middle at the base of the elytra and nearly across them below the middle; sides of prosternum and metasternum also dark; elytral striation only partial, absent in apical half.

Head polished, impunctate, entirely lacking median vertical groove, transverse groove between and about eyes deep; margin about antennal sockets in lower front prominently developed; a darker area on occiput. Antennae extending to the middle of the elytra, second joint nearly as long as first, joints 3–5 slender, 7–11 thickened, last six joints dark. Prothorax nearly as long as wide with arcuate sides, the margin dark, disc polished, and with a dark piceous area on either side; surface finely and not densely punctate. Elytra polished, paler yellow-brown, having a dark piceous area at base between the humerus and scutellum and another transverse area below the middle nearly reaching the suture, margins dark; only the sutural striae entire, the others only partial, disappearing at the sides and middle and over the basal callosities. Body beneath shiny, sides of prosternum and breast dark, abdomen and legs pale. Femora with prominent hairs at apex, tibiae of middle and hind legs emarginate, claws toothed. Length 2.2 mm; width 1.2 mm.

Type male, Mus. Comp. Zool. no. 27356.

Type locality.—Maricao Forest, 2,000–3,000 feet altitude, Puerto Rico; collected May 30–June 2, 1938, by P. J. Darlington.

Remarks.—The conspicuous bristles at the apex of the femora have suggested the name *tricharthrum* for this species.

Metachroma cinctipes, n. sp.

Fig. 9

About 5 mm long, broadly oblong, shining, head and prothorax and most of undersurface more or less reddish brown with piceous areas, elytra and legs paler yellowish brown, elytra with small spots about base and below middle, the legs, both femora and tibiae with dark bands. Prothorax nearly as wide as elytra, polished. Elytral striation distinct.

Head with large eyes, interocular space less than half width of head, a broad piceous stripe extending down the front, lower front deeper brown, jaws piceous, not very shiny, alutaceous with distinct but not dense punctation; median and transverse grooves not very distinct, groove about inner margin of eyes well marked. Antennae extending below humeri, the outer joints thicker and a little darker, second joint longer than third. Prothorax not twice as broad as long, much broader at base than anteriorly, with rounded sides and little trace of a tooth at apical angle, but a well-marked one at base, lower margin sinuate. Surface polished, nearly

impunctate, reddish brown with a large dark area on either side. Elytra not much wider than prothorax with small humeri and short intrahumeral sulcus and very little depression below, the basal callosities not at all prominent; surface shining, striate punctures well spaced and distinct; in color pale yellow brown with remnants of spots about base, a large one on each elytron below the middle near the suture, and a smaller one near lateral margin. Body beneath tending to be reddish brown or piceous, especially on breast; legs with dark bands both on femora and tibiae, and the tarsal joints dark, all femora with a trace of a tooth, most pronounced on the hind femora. Claws with short tooth. Length 4.7–5.6 mm; width 2.8–3.1 mm.

Type female, Mus. Comp. Zool. no. 27357.

Type locality.—Mount Diego de Acampo, Dominican Republic, altitude 3,000–4,000 feet; collected in July 1938 by P. J. Darlington.

Other localities.—Villa Altagracia, Dominican Republic, July 1938, San Jose de las Matas, 1,000–2,000 feet altitude, June 1938, both collected by P. J. Darlington; Puerto Plata, Dominican Republic, collected by Donald Hurst; Mount Basil, northern Haiti, 4,700 feet altitude, September 9, 1934, collected by P. J. Darlington; Furcy, Haiti, collected by W. M. Mann.

Remarks.—This species resembles *Metachroma rosae* Byrant, described from Jamaica, but specimens from Jamaica tentatively identified as *rosae* are smaller, paler, and with much denser punctures on the elytra.

ZOOLOGY.—*A new crawfish of the genus* Procambarus *from Louisiana (Decapoda: Astacidae).*[1] GEORGE HENRY PENN, New Orleans, La. (Communicated by W. L. SCHMITT.)

The new species of crawfish described herein has been collected on several occasions during the past eight years by different carcinologists and though recognized as an undescribed species has been neglected by each because of more pressing duties. Dr. Horton H. Hobbs, Jr., of the University of Florida, and Dr. Rendell Rhoades, of the Ohio Division of Conservation and Natural Resources, have both kindly furnished me with their collections of the species for comparison with the type material in making the descriptions.

I take great pleasure in naming this species in honor of Mr. Percy Viosca, Jr., of New Orleans, who collected the type specimens and to whom I have been indebted for many favors in the past decade.

Procambarus vioscai, n. sp.

Diagnosis.—Rostrum with prominent lateral spines; areola moderately narrow. Thoracic region of carapace less than half as long as cephalic region. First pleopod of first form male terminating in four parts: mesial process[2] a long tapering spine projecting caudolaterally; cephalic process a bladelike process projecting ventrocaudally; central projection heavy, blunt-tipped; caudal process very small, blunt-tipped.

Male holotype (form I).—Body subovate, compressed dorsoventrally. Abdomen about same width as cephalothorax.

Areola wide (length five times width); sides converge dorsally in hourglass type marking, indistinct caudally; areola 26.8 percent of entire length of carapace; six punctations across narrowest part of areola.

Rostrum widest at base, gently tapering, slightly excavate; acumen long (about one-sixth length of cephalic portion of carapace). Lateral spines strong. Postorbital ridges terminating anteriorly in long, sharp, anterolaterally projecting spines.

Surface of carapace bearing fine tubercles and punctations. Two large spines projecting anteriorly on each side of carapace along cervi-

[1] Aided by a grant from the New Orleans Academy of Science in 1940. Received November 1, 1945.

[2] The terminology used here in describing the parts of the first pleopod of the form I male is that proposed by Hobbs (*On the first pleopod of the male Cambari*, Proc. Florida Acad. Sci. 5: 55–61. 1942; and *Notes on the first pleopod of the male Cambarinae*, Quart. Journ. Florida Acad. Sci. 8: 67–79. 1945.)

cal groove. Cephalolateral margins of thoracic region of carapace each with one strong spine near anterior extremity of cervical groove.

Abdomen same width as cephalothorax, slightly tapering posteriorly; approximately equal to cephalothorax in length.

Antennules of usual form.

Antennae nearly equal to total length of crawfish; of normal form.

Antennal scales extending to tip of rostrum, with the usual strong spine on outer margin; triangular in shape, widest point about one-third of distance from base.

First right pereiopod entirely tuberculate;

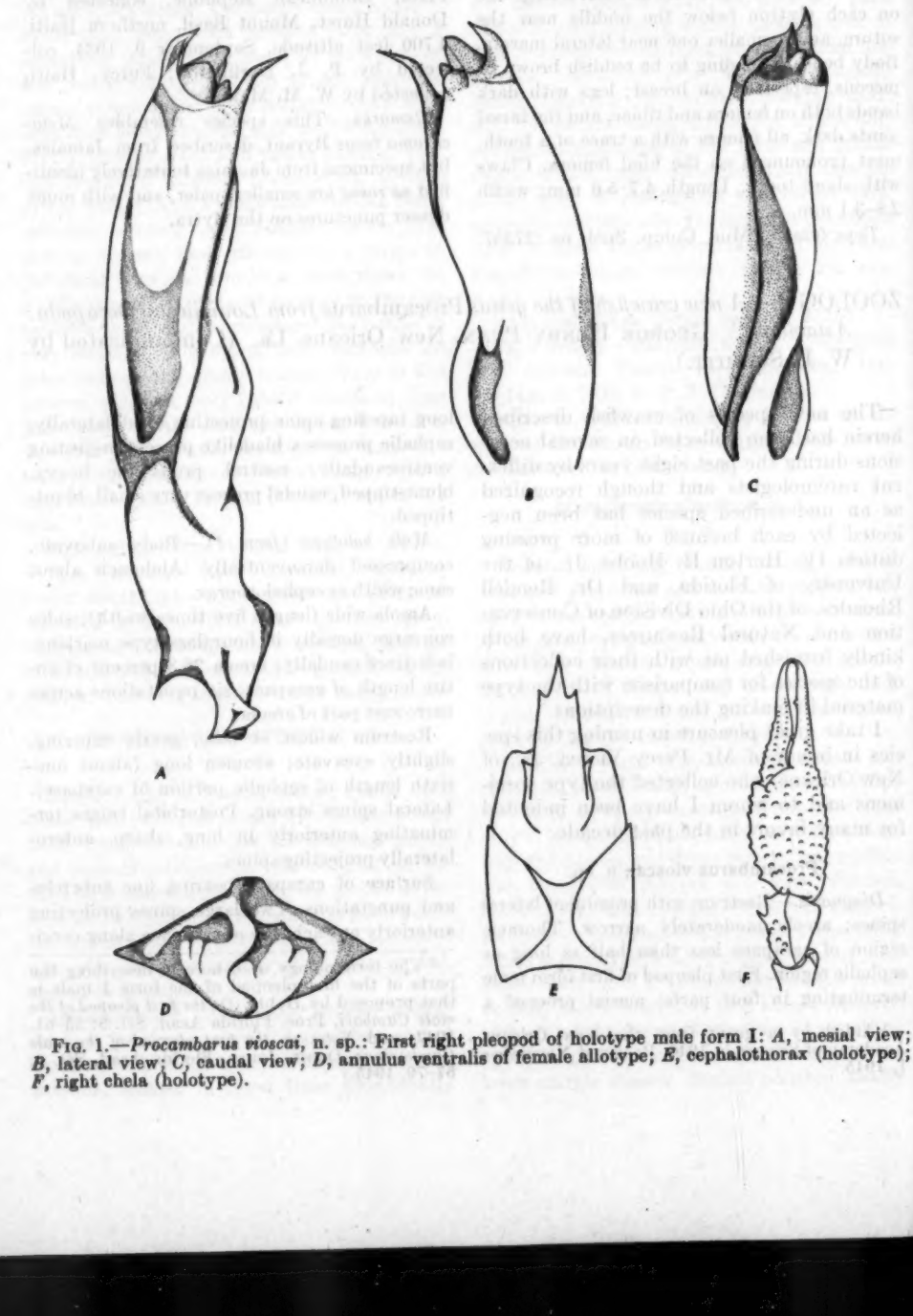


FIG. 1.—*Procambarus vioscai*, n. sp.: First right pleopod of holotype male form I: *A*, mesial view; *B*, lateral view; *C*, caudal view; *D*, annulus ventralis of female allotype; *E*, cephalothorax (holotype); *F*, right chela (holotype).

palm compressed dorsoventrally. Movable finger terminating distally in a sharp, corneous tip bent laterad and extending below the tip of the immovable finger when the fingers are closed; both margins with small tubercles, strongest near base.

Immovable finger with inner marginal ridge bearing small tubercles, and terminating in a sharp corneous tip bent mesially.

Ischiopodites of third and fourth pereiopods bearing hooks. Hooks strong, corneous, bent toward base of the ischiopodite. Hook on third pereiopod stronger.

First pleopod extending to base of third pereiopod; tip ending in four distinct parts as follows: mesial process most prominent, extending laterad in a long, tapering, slightly curved spine. Cephalic process corneous, also prominent, flattened laterally and slightly curved or excavate on its median aspect, appearing as a bladelike process. Central projection corneous, blunt-tipped; line of fusion of centrocephalic and centrocaudal processes clearly marked. Caudal process corneous, very small, blunt-tipped. Rim of apical knob with a ring of setae which hides all except the mesial process from view in fresh specimen.

Female allotype.—The female differs from the male in the following points: carapace more nearly cylindrical in cross section. Annulus ventralis: sinus originating along midventral line in a flattened trough just posterior to anterior margin, turning slightly sinistrad, caudad for about a third of its length, slightly dextrad, caudad for another third of its length, sinistrad, and sharply dextrad, terminating along the caudal margin in a tubercle. On each side the surface is depressed so that the anterior margin forms a ridge, which in turn is shaded anteriorly by the projecting edge of the sternum.

Measurements.—The holotype: carapace, height 18.5 mm, width 17.4 mm, length 41.3 mm; areola, width 2.0 mm, length 11.1 mm; rostrum, length 30.2 mm; abdomen, length 42.0 mm; right chela, length of outer margin 24.0 mm, width at widest point 6.6 mm, length of inner margin of movable finger 16.0 mm, length of inner margin of palm 13.5 mm. The allotype: carapace, height 13.5 mm, width 13.5 mm, length 31.1 mm; areola, width 2.0 mm, length 8.5 mm; rostrum, length 22.6 mm; abdomen, length 32.5 mm; right chela, length of outer margin 15.7 mm, width at widest point 5.2 mm, length of inner margin of movable finger 8.2 mm.

Type specimens.—The male holotype (form I), no. 79925, a male paratype (form I), no. 79926 from the type locality, and the female allotype, no. 79931, from Kingsville, Grant Parish, La., are deposited in the United States National Museum.

Type locality.—Big Creek at Fishville, about 3 miles east of Pollock, Grant Parish, La. They were collected on February 22, 1938, by Percy Viosca, Jr., from the margin of the creek among leaves and other debris accumulated on the lee side of a sandbar. Big Creek is a typical, swift-flowing, sand-bottomed pinewoods Louisiana stream; south of Fishville it joins the Little River. Other crawfishes collected in the same ecological niche with *P. vioscai* were *Procambarus blandingii acutus*, *Orconectes creolanus*, and another species of *Procambarus* as yet undescribed.

Additional specimens examined.—One male form II, 2 females, and 11 juveniles from Rock Creek near Kingsville, Grant Parish, La., U.S.N.M. no. 79927. One male form I, 2 males form II, 4 females, and 2 juveniles from Pollock, Grant Parish, La., deposited in the Alabama State Museum of Natural History at the request of Dr. Rendell Rhoades. One male form II and a female from Calhoun, Ouachita Parish, La. (no. 7-3141-7); 1 male form I and 2 females from Richland Creek near Jackson, Rankin County, Miss. (no. 7-3141-10a); 3 males form I, 2 females, and 6 juveniles from Magee, Simpson County, Miss. (no. 7-3141-12); and 1 male form I, 1 female, and 1 juvenile from Big Swamp near Seminary, Covington County, Miss. (no. 7-3141-13) in the collections of Dr. Horton H. Hobbs, Jr., at the University of Florida.

Relationships.—This species belongs to the section of *Procambarus blandingii*, group of *P. spiculifer*. Its closest relative appears to be *Procambarus versutus*.

Discussion.—Among the series of specimens examined, those from Calhoun, La., and Jackson, Magee, and Seminary, Miss., in Dr. Hobbs's collections appear to be of a smaller race than typical *P. vioscai* and may subsequently be recognized as a subspecies.

ZOOLOGY.—*A new genus and species of minute marine stiliferid mollusks from Florida.*[1]

PAUL BARTSCH, United States National Museum.

Mrs. Athleen V. Underwood has recently sent a small collection of minute marine mollusks to the U. S. National Museum for determination, among which is a remarkable shell that I am unable to place in any of the known genera. I am therefore giving it a scientific status here under the designation of *Athleenia burryi*, new genus and species.

Athleenia, n. gen.

Shell minute, elongate-ovate, thin. Nuclear whorls 3.5, well rounded, smooth, forming a slender apex. Postnuclear whorls strongly tabulatedly shouldered at the summit, marked by lines of growth only. Periphery and base rounded. Aperture ovate; columella short.

Type species: *Athleenia burryi*, n. sp.

The nuclear spire leads me to believe that the genus is a member of the family Stiliferidae.

I take pleasure in naming the genus for Mrs. Underwood, whose fine work in collecting minute mollusks is adding materially to our knowledge of this usually overlooked field.

Athleenia burryi, n. sp.

Shell very minute, elongate-ovate, thin, vitreous, translucent. The nucleus consists of 3.5 whorls, which are well rounded and smooth and form a somewhat styliform apex. The postnuclear whorls are strongly tabulatedly shouldered at the summit. The shoulder extends over about one-sixth of the width of the turns and terminates anteriorly in a sharp angle. The rest of the whorls is slightly rounded. Suture constricted. Periphery rounded. Base long, well rounded. Aperture ovate; peristome slightly thickened at the edge and slightly angulated at the posterior shoulder; inner lip concave and reflected over the short columella; parietal wall covered by a thin callus. The entire surface is marked by feeble inconspicuous lines of growth only.

FIG. 1.—*Athleenia burryi*, n. gen. and sp.

The type (U.S.N.M. no. 573616) was dredged in 400 feet off Carysfort Reef Light, Florida. It has 8 whorls and measures: length, 2.1 mm; diameter, 0.8 mm.

I take pleasure in naming the species for Mr. and Mrs. W. A. Burry, whose dredge yielded the specimens.

[1] Published by permission of the Secretary of the Smithsonian Institution. Received October 23, 1945.

Obituaries

EDWARD WILBER BERRY, paleobotanist, emeritus professor of paleontology and former dean at Johns Hopkins University, died early in the morning of September 20, 1945, at Stonington, Conn. Mrs. Berry (nee Mary Willard) died in 1939. Surviving in the immediate family are their sons Charles T. and E. Willard Berry.

Mr. Berry was born at Newark, N. J., on February 10, 1875. After graduation from high school he was for a time connected with a cotton-goods commission house and traveled extensively in the South. From 1897 to 1905, while managing the Passaic, N. J., Daily News, he found a hobby in the study of the Cretaceous deposits of New Jersey and the fossil plants contained therein. Presently his publications on these studies attracted the favorable notice of William B. Clark, head of the department of geology at Johns Hopkins, and in 1905 Clark invited him to become his assistant in paleontology at the university and on the Maryland Geological Survey. By 1917 Mr. Berry had become professor of paleontology, assistant state geologist of Maryland, and senior geologist of the United States Geological Survey, and, besides numerous articles on the Cretaceous floras of the Atlantic Coastal Plain, he had to his credit a large volume on the lower Eocene floras of southeastern North America, which gave him an international reputation as a paleobotanist. This reputation was further enhanced by his travels in South America and his publications on South American fossil plants.

From 1929 to 1942 Mr. Berry was dean of the School of Arts and Sciences at Johns Hopkins and provost of the University. In 1930 he accepted the only degree he ever held—an honorary doctor of science from Lehigh University. Mr. Berry was elected to the National Academy of Sciences in 1922. Besides holding membership in a few foreign scientific societies, he was a fellow of the Geological Society of America, Paleontological Society (of which he was president in 1924), American Philosophical Society, American Association for the Advancement of Science, the Washington Academy of Sciences, and others. He was awarded the Mary Clark Thompson medal of the National Academy of Sciences, but his climactic honor was election to the presidency of the Geological Society of America for 1945.

A bibliography comprising several hundred titles testifies eloquently to Mr. Berry's facile pen and prolific output. Included in this list are two books—*Paleontology* and *Tree ancestors*. As many of these publications represent, literally and figuratively, large amounts of spadework, such as the collection, description, and illustration of specimens, they contain inevitable imperfections which new information should eventually correct. Some of these also bear the earmarks of haste reminiscent of Mr. Berry's newspaper experience. Nevertheless, a survey of the contents of his bibliography reveals a comprehensive, philosophic outlook and unquestionably indicates that he belongs with the immortals of paleobotany.

Although Mr. Berry could be caustic in criticizing the work of others, he was in reality an amiable man and will long be remembered by his former students and professional associates as a hard worker, independent thinker, stimulating teacher, and generous friend.

ROLAND W. BROWN

HARRY VAUGHN HARLAN died at Phoenix, Ariz., on November 6, 1944. He had been a member of the Washington Academy of Sciences since 1919. Dr. Harlan was as widely known throughout the world in his particular field as any American scientist. He was one of those fortunate individuals whose official duties took him into many lands, and the friendships and contacts which he established resulted in a knowledge and appreciation of his work on a world-wide basis that not many men attain.

Dr. Harlan was born at London Mills, Ill., on February 19, 1882. The family moved to Kansas when he was a small boy and he grew up in that State. He was an individual whose ancestry and early training were reflected in his character and philosophy of life to an unusual degree. His ancestry was Quaker, the original American member of the family coming to Pennsylvania with William Penn. While Dr. Harlan himself was not a communicant of any religious group, everything that he thought,

said, and did reflected in a very large measure the religious teachings and philosophies of the Quakers. His hatred of sham and show, his intense love of the truth, his kindliness and thoughtfulness of others, all were a part of this heritage.

Dr. Harlan graduated from Kansas State College in 1904, and he received his M.S. from the same institution in 1909. He received the degree of Sc.D. from the University of Minnesota in 1914.

Soon after graduation from college Dr. Harlan accepted a position in the Philippine Islands, where he remained from 1905 to 1908. During this period he established experiment stations at Iloilo and Boayombong. In 1913 and 1914 he made a trip to the highlands of Peru to study agricultural possibilities in that area. His travel experience included a special survey of food conditions in Central Europe and the Balkans immediately after the close of World War I under the auspices of the U. S. Grain Corporation and American Relief. Incidentally, his estimates as to food supplies proved entirely reliable, although at variance with official reports, and in the end formed the basis of relief activities in that area. Then finally in 1923 he traveled in Europe, North Africa, Abyssinia, and India, searching for materials to be used in the improvement of barley in this country. In the course of this exploration he carried out an extremely successful trip through the then most primitive areas of Ethiopia where Europeans and Americans had been only rarely if at all before. In 1927 he was sent to Europe as a special representative of the Department of Agriculture for conferences on barley grades and grading in connection with exports of both feed and malting barley.

On his return to this country from the Philippines, and after an intervening period of graduate study, Dr. Harlan accepted a position in the Department of Agriculture in 1910. Placed in charge of barley investigations in the Bureau of Plant Industry, he began a long period of productive research on which he was actively engaged to the day of his death. His research on barley covered a broad field of interest as evidenced in his publications. His first work dealt with the morphology of barley in relation to malting. This was followed by studies on the classification of barley and the characters of barley important in breeding and improvement. Then came a series of papers dealing with growth and development of the barley plant and of the barley kernel, and in later years studies on methods and techniques of barley improvement. During all this period he was also carrying forward an active program of barley breeding, and a number of improved varieties widely grown in the United States resulted from his efforts. He brought together one of the world's largest collections of barley varieties. A list of 55 papers, collectively a standard guide and reference on barley, attest to the immense amount and value of his work.

Harry Harlan was characterized by a deep and all-comprehensive love for his fellow man. Being a man of firm convictions, there were, of course, many individuals for whom he cared less than for others; but it can be truthfully said of him that no one ever came to him in trouble whom he did not help. Many individuals, who never knew the source of their assistance, benefited from his helpfulness. This was characteristic. He particularly delighted in helping young people, and he had a long list of young friends, scientific and otherwise, extending from one coast of the United States to the other, and even into foreign countries. The number of young people who were influenced by Harry Harlan is remarkable, the more so since his contacts primarily grew only from his interest and not as a part of any regular duties.

Harry Harlan was a most loyal and helpful friend. Association with him was an inspiration. His broad interests and knowledge were a constant mental stimulus to his associates. The Washington Academy suffered a real loss in the death of this member.

He is survived by his wife, Augusta Griffing Harlan, and two sons, Wilbur Vaughn, of the U. S. Army, and Jack Rodney, of the Woodward Field Station, U. S. Department of Agriculture, Woodward, Okla.

M. A. McCall